DIMAL HEADER TEST (CARD)
TEST1

```
                        ABS
026C                    ORG     /3004                                   80200010
                    ********************************************        80200020
                    *           WAITS       ERROR COMMENTS       *      80200030
                    ********************************************        80200040
                    ********************************************        80200050
3004 0 0018         DC      W3004+1     MDX BY 1 FAILED                 80200060
3005 0 0017         DC      W3005+1     MDX BY 2 FAILED                 80200070
3006 0 0016         DC      W3006+1     MDX BY 2 FAILED                 80200080
3007 0 0015         DC      W3007+1     MDX BY 4 FAILED                 80200090
3008 0 0014         DC      W3008+1     MDX BY 4 FAILED                 80200100
3009 0 001F         DC      W3009+1     MDX BY 4 FAILED                 80200110
300A 0 0020         DC      W300A+1     MDX BY 4 FAILED                 80200120
300B 0 0022         DC      W300B+1     MDX BY -2 FAILED                80200130
300C 0 0025         OC      W300C+1     MDX BY -2 FAILED                80200140
300D 0 0026         OC      W300D+1     MDX BY -2 FAILED                80200150
300E 0 0027         DC      W300E+1     MDX BY -2 FAILED                80200160
300F 0 0028         DC      W300F+1     MDX BY 8 FAILED                 80200170
3010 0 0029         DC      W3010+1     MDX BY 8 FAILED                 80200180
3011 0 002A         DC      W3011+1     MDX BY 8 FAILED                 80200190
3012 0 002B         DC      W3012+1     MDX BY 8 FAILED                 80200200
3013 0 002F         DC      W3013+1     BSC-CARRY FAILED                80200210
3014 0 0033         DC      W3014+1     BSC-OVERFLW FAILED              80200220
3015 0 0035         OC      W3015+1     BSC-OVFLW SKPD-SHOULD           80200230
                    *                   *NOT HAVE                       80200240
3016 0 0038         DC      W3016+1     BSC-C SHPD SHOULD NDT           80200250
3017 0 003B         DC      W3017+1     LD ACC TO 0 FAILED              80200260
3018 0 003E         DC      W3018+1     LD ACC TO 0 FAILED              80200270
3019 0 0040         OC      W3019+1     BSC ON EVEN FAILED              80200280
301A 0 0043         DC      W301A+1     LOAD ACC. FAILED OR             80200290
                    *                   *BSC ON NEG. FAILED             80200300
3018 0 0046         DC      W3018+1     BSC ON + SKPD-                  80200310
                    *                   *SHOULD NOT HAVE                80200320
301C 0 0049         OC      W301C+1     BSC ON E SKPD-                  80200330
                    *                   *SHOULD NOT HAVE                80200340
301D 0 004D         OC      W301D+1     ACC NOT = 7FFF                  80200350
301E 0 0051         DC      W301E+1     ACC NOT = 3FFF                  80200360
301F 0 0055         DC      W301F+1     ACC NOT = 1FFF                  80200370
3020 0 0059         DC      W3020+1     ACC NOT = 0FFF                  80200380
3021 0 005D         DC      W3021+1     ACC NOT = 07FF                  80200390
3022 0 0061         DC      W3022+1     ACC NOT = 03FF                  80200400
3023 0 0065         DC      W3023+1     ACC NOT = 01FF                  80200410
3024 0 0069         DC      W3024+1     ACC NOT = 00FF                  80200420
3025 0 006D         DC      W3025+1     ACC NOT = 007F                  80200430
3026 0 0071         DC      W3026+1     ACC NOT = 003F                  80200440
3027 0 0075         DC      W3027+1     ACC NOT = 001F                  80200450
3028 0 0079         DC      W3028+1     ACC NOT = 000F                  80200460
3029 0 007D         DC      W3029+1     ACC NOT = 0007                  80200470
302A 0 0081         DC      W302A+1     ACC NOT = 0003                  80200480
302B 0 0085         DC      W302B+1     ACC NDT = 0001                  80200490
302C 0 0088         DC      W302C+1     ACC NOT = 0000                  80200500
302D 0 008A         DC      W302D+1     ACC NDT = 0000                  80200510
302E 0 009C         DC      W302E+1     ACC NOT = FFFF                  80200520
302F 0 0094         DC      W302F+1     ACC NDT = FFFF                  80200530
3030 0 0098         DC      W3030+1     ACC NDT = 7FFF                  80200540
3031 0 009C         DC      W3031+1     ACC NOT = 3FFF                  80200550
3032 0 00A0         DC      W3032+1     ACC NOT = 1FFF                  80200560
3033 0 00A4         DC      W3033+1     ACC NOT = 0FFF                  80200570
3034 0 00A8         DC      W3034+1     ACC NOT = 07FF                  80200580
3035 0 00AC         DC      W3035+1     ACC NDT = 03FF                  80200590
3036 0 00BC         DC      W3036+1     ACC NDT = 01FF                  80200600
3037 0 00B4         DC      W3037+1     ACC NDT = 00FF                  80200610
3038 0 00B8         DC      W3038+1     ACC NDT = 007F                  80200620
3039 0 00BC         OC      W3039+1     ACC NDT = 003F                  80200630
303A 0 00C0         DC      W303A+1     ACC NDT = 001F                  80200640
303B 0 00C4         DC      W3038+1     ACC NDT = 000F                  80200650
303C 0 00C8         DC      W303C+1     ACC NDT = 0007                  80200660
303D 0 00CC         DC      W303D+1     ACC NDT = 0003                  80200670
303E 0 00D0         DC      W303E+1     ACC NDT = 0001                  80200680
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DIMAL HEADER TEST (CARD)
TEST1

```
303F 0 00D3         DC      W303F+1     ACC NOT = 0000                  80200690
3040 0 00D5         DC      W3040+1     ACC NOT = 0000                  80200700
3041 0 00D8         DC      W3041+1     ACC NOT = ZERO                  80200710
3042 0 00DC         OC      W3042+1     ACC NOT = FFFF                  80200720
3043 0 00DF         OC      W3043+1     ACC NOT = ZERO                  80200730
3044 0 00E2         DC      W3044+1     EOR CF 0 AND 0 FAILED           80200740
3045 0 00E6         DC      W3045+1     EOR OF 1 AND 1 FAILED           80200750
3046 0 00EA         DC      W3046+1     EOR OF 1 AND 0 FAILED           80200760
3047 0 00EE         DC      W3047+1     EOR OF 1 AND 0 FAILED           80200770
3048 0 00F3         DC      W3048+1     EOR OF 0 AND 1 FAILED           80200780
3049 0 00F7         DC      W3049+1     EOR OF 0 AND 1 FAILED           80200790
304A 0 00F8         OC      W304A+1     WRONG LOCATION LOADED           80200800
3048 0 0100         DC      W3048+1     WRONG LOCATION LOADED           80200810
304C 0 0104         DC      W304C+1     WRONG LOCATION LOADED           80200820
304D 0 0109         DC      W304D+1     WRONG LOCATION LOADED           80200830
304E 0 010C         DC      W304E+1     BSC FELL THROUGH                80200840
304F 0 0100         DC      W304F+1     BSC SKPD-SHOULD BRNC            80200850
3050 0 0111         DC      W3050+1     BSC E FELL THROUGH              80200860
3051 0 0112         DC      W3051+1     BSC SKPD-SHOULD BRNC            80200870
3052 0 0115         DC      W3052+1     BSC + FELL THROUGH              80200880
3053 0 0116         OC      W3053+1     BSC SKPD-SHOULD BRNC            80200890
3054 0 0119         OC      W3054+1     BSC Z FELL THROUGH              80200900
3055 0 011A         DC      W3055+1     BSC SKPD-SHOULD BRNC            80200910
3056 0 011E         DC      W3056+1     BSC SKPD-SHOULD NOT             80200920
3057 0 0122         DC      W3057+1     BSC C FELL THROUGH              80200930
3058 0 0123         DC      W3058+1     BSC SKPD-SHOULD BRNC            80200940
3059 0 0126         DC      W3059+1     BSC O FELL THROUGH              80200950
305A 0 0127         DC      W305A+1     BSC SKPD-SHOULD BRNC            80200960
3058 0 0128         DC      W305B+1     BSC BRNCD-SHOULD NOT            80200970
305C 0 0130         DC      W305C+1     BSC BRNCD-SHOULD NOT            80200980
3050 0 0134         DC      W3050+1     BSC BRNCD-SHOULD NOT            80200990
305E 0 0138         OC      W305E+1     BSC +- FELL THROUGH             80201000
305F 0 0139         DC      W305F+1     BSC SKPD-SHOULD BRNC            80201010
3060 0 013E         OC      W3060+1     BSC BRNCHED-SHOULDNT            80201020
3061 0 0143         DC      W3061+1     BSC BRNCHED-SHOULDNT            80201030
3062 0 0148         DC      W3062+1     INDIRECT BSC FAILED             80201040
3063 0 014C         OC      W3063+1     INDIRECT BSC FAILED             80201050
                    ********************************************        80201060
                    ABS                                                 80201070
3064                ORG     20                                          80201080
                    ********************************************        80201090
0014 0 0200         PID     OC      /0200       PID                     80201100
                    ********************************************        80201110
                    *                                                   80201120
                    *                TEST MDX OPERATION                 80201130
                    *                                                   80201140
                    ********************************************        80201150
0015 0 7000                 MDX     A080        8CH TO NEXT INST        80201160
0016 0 7001         A080    MDX     G080                                80201170
0017 0 3004         W3004   DC      /3004       MDX BY 1 FAILED         80201180
                    *                                                   80201190
0018 0 7002         G080    MDX     G081                                80201200
0019 0 3005         W3005   DC      /3005       MDX BY 2 FAILED         80201210
001A 0 3006         W3006   DC      /3006       MDX BY 2 FAILED         80201220
                    *                                                   80201230
0018 0 7004         G081    MDX     G082                                80201240
001C 0 3007         W3007   DC      /3007       MDX BY 4 FAILED         80201250
001D 0 3008         W3008   DC      /3008       MDX BY 4 FAILED         80201260
001E 0 3009         W3009   DC      /3009       MDX BY 4 FAILED         80201270
001F 0 300A         W300A   DC      /300A       MDX BY 4 FAILED         80201280
                    *                                                   80201290
0020 0 7002         GD82    MDX     G084                                80201300
0021 0 3008         W300B   DC      /3008       MDX BY -2 FAILED        80201310
                    *                                                   80201320
0022 0 7008         G083    MDX     AGC0                                80201330
0023 0 70FE         G084    MDX     G083                                80201340
0024 0 300C         W300C   DC      /300C       MDX BY -2 FAILED        80201350
0025 0 300D         W300D   DC      /300D       MDX BY -2 FAILED        80201360
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OIMAL HEADER TEST (CARD)
TEST1

```
0026 0 300E        W300E DC      /300E       MDX BY -2 FAILED          B0201370
0027 0 300F        W300F DC      /300F       MDX BY 8 FAILED           B0201380
0028 0 3010        W3010 DC      /3010       MDX BY 8 FAILED           B0201390
0029 0 3011        W3011 DC      /3011       MDX BY 8 FAILED           B0201400
002A 0 3012        W3012 DC      /3012       MDX BY 8 FAILED           B0201410
                   ********************************************      B0201420
                   *                                                 B0201430
                   *                  TEST OF BSC SKIP WHEN IT       B0201440
                   *                  SHOULD NOT                     B0201450
                   *                                                 B0201460
                   ********************************************      B0201470
002B 0 2003        AOCO  LDS     3                                   B0201480
002C 0 4802              BSC     C                                   B0201490
002D 0 7002              MDX     GOC1                                B0201500
002E 0 3013        W3013 OC      /3013       BSC-CARRY FAILED        B0201510
                   *                                                 B0201520
002F 0 0000        N100  OC      0                                   B0201530
0030 0 4801        GOC1  BSC     0                                   B0201540
0031 0 7001              MDX     GOC2                                B0201550
0032 0 3014        W3014 OC      /3014       BSC-OVERFLW FAILED      B0201560
                   *                                                 B0201570
0033 0 4801        GOC2  BSC     0                                   B0201580
0034 0 3015        W3015 DC      /3015       BSC-OVFLW SKPD-SHOULD   B0201590
                   *                         *NOT HAVE               B0201600
0035 0 2000              LDS     0                                   B0201610
0036 0 4802              BSC     C                                   B0201620
0037 0 3016        W3016 DC      /3016       BSC-C SKPD SHOULD NOT   B0201630
                   *                                                 B0201640
                   ********************************************      B0201650
                   *                                                 B0201660
                   *                  TEST OF ACC ABILITY TO HOLD    B0201670
                   *                  ALL ZEROS                      B0201680
                   *                                                 B0201690
                   ********************************************      B0201700
0038 0 C0F6              LO      N100                                B0201710
0039 0 4820              BSC     Z                                   B0201720
003A 0 3017        W3017 DC      /3017       LD ACC TO 0 FAILED      B0201730
                   *                                                 B0201740
003B 0 C0F3              LO      N100        ACC=0,RELOAD TO 0       B0201750
003C 0 4820              BSC     Z                                   B0201760
003D 0 3018        W3018 OC      /301B       LD ACC TO 0 FAILED      B0201770
                   *                                                 B0201780
003E 0 4804              BSC     E                                   B0201790
003F 0 3019        W3019 OC      /3019       BSC ON EVEN FAILED      B0201800
                   *                                                 B0201810
                   ********************************************      B0201820
                   *                                                 B0201830
                   *                  CONTAIN ALL ONES               B0201840
                   *                                                 B0201850
                   ********************************************      B0201860
0040 0 C04A              LD      N140        ACC.=0,RELOAD TO ONES   B0201870
0041 0 4810              BSC     -                                   B0201880
0042 0 301A        W301A DC      /301A       LOAD ACC. FAILED OP     B0201890
                   *                         *SHOULD NOT HAVE        B0201900
                   *                         *BSC ON NEG. FAILED     B0201910
0043 0 4808              BSC     +                                   B0201920
0044 0 7001              MDX     G140                                B0201930
0045 0 301B        W301B OC      /301B       BSC ON + SKPD-          B0201940
0046 0 4804        G140  BSC     E                                   B0201950
0047 0 7001              MDX     G141                                B0201960
0048 0 301C        W301C OC      /301C       BSC ON E SKPD-          B0201970
                   *                         *SHOULD NOT HAVE        B0201980
0049 0 1801        G141  SRA     1                                   B0201990
004A 0 4804              BSC     E                                   B0202000
004B 0 7001              MDX     G142                                B0202010
004C 0 3010        W301D OC      /301D       ACC NOT = 7FFF          B0202020
                   *                                                 B0202030
0040 0 1801        G142  SRA     1                                   B0202040
```


OIMAL HEADER TEST (CARD)
TEST1

```
004E 0 4804              BSC     E                                   B0202050
004F 0 7001              MDX     G143                                B0202060
0050 0 301E        W301E OC      /301E       ACC NOT = 3FFF          B0202070
                   *                                                 B0202080
0051 0 1801        G143  SRA     1                                   B0202090
0052 0 4804              BSC     E                                   B0202100
0053 0 7001              MDX     G144                                B0202110
0054 0 301F        W301F OC      /301F       ACC NOT = 1FFF          B0202120
                   *                                                 B0202130
0055 0 1801        G144  SRA     1                                   B0202140
0056 0 4804              BSC     E                                   B0202150
0057 0 7001              MDX     G145                                B0202160
0058 0 3020        W3020 OC      /3020       ACC NOT = 0FFF          B0202170
                   *                                                 B0202180
0059 0 1801        G145  SRA     1                                   B0202190
005A 0 4804              BSC     E                                   B0202200
005B 0 7001              MDX     G146                                B0202210
005C 0 3021        W3021 OC      /3021       ACC NOT = 07FF          B0202220
                   *                                                 B0202230
0050 0 1801        G146  SRA     1                                   B0202240
005E 0 4804              BSC     E                                   B0202250
005F 0 7001              MDX     G147                                B0202260
0060 0 3022        W3022 OC      /3022       ACC NOT = 03FF          B0202270
                   *                                                 B0202280
0061 0 1801        G147  SRA     1                                   B0202290
0062 0 4804              BSC     E                                   B0202300
0063 0 7001              MDX     G148                                B0202310
0064 0 3023        W3023 OC      /3023       ACC NOT = 01FF          B0202320
0065 0 1801        G148  SRA     1                                   B0202330
0066 0 4804              BSC     E                                   B0202340
0067 0 7001              MDX     G149                                B0202350
0068 0 3024        W3024 OC      /3024       ACC NOT = 00FF          B0202360
                   *                                                 B0202370
0069 0 1801        G149  SRA     1                                   B0202380
006A 0 4804              BSC     E                                   B0202390
006B 0 7001              MDX     G14A                                B0202400
006C 0 3025        W3025 OC      /3025       ACC NOT = 007F          B0202410
                   *                                                 B0202420
006D 0 1801        G14A  SRA     1                                   B0202430
006E 0 4804              BSC     E                                   B0202440
006F 0 7001              MDX     G14B                                B0202450
0070 0 3026        W3026 DC      /3026       ACC NOT = 003F          B0202460
                   *                                                 B0202470
0071 0 1801        G14B  SRA     1                                   B0202480
0072 0 4804              BSC     E                                   B0202490
0073 0 7001              MDX     G14C                                B0202500
0074 0 3027        W3027 OC      /3027       ACC NOT = 001F          B0202510
                   *                                                 B0202520
0075 0 1801        G14C  SRA     1                                   B0202530
0076 0 4804              BSC     E                                   B0202540
0077 0 7001              MDX     G140                                B0202550
0078 0 3028        W3028 OC      /3028       ACC NOT = 000F          B0202560
                   *                                                 B0202570
0079 0 1801        G140  SRA     1                                   B0202580
007A 0 4804              BSC     E                                   B0202590
0078 0 7001              MDX     G14E                                B0202600
007C 0 3029        W3029 DC      /3029       ACC NOT = 0007          B0202610
                   *                                                 B0202620
0070 0 1801        G14E  SRA     1                                   B0202630
007E 0 4804              BSC     E                                   B0202640
007F 0 7001              MDX     G14F                                B0202650
0060 0 302A        W302A OC      /302A       ACC NOT = 0003          B0202660
                   *                                                 B0202670
0081 0 1801        G14F  SRA     1                                   B0202680
0082 0 4804              BSC     E                                   B0202690
0083 0 7001              MDX     G150                                B0202700
0084 0 302B        W302B DC      /302B       ACC NOT = 0001          B0202710
                   *                                                 B0202720
```

DIMAL HEADER TEST (CARD)
TEST1

```
0085 0 1801      G150  SRA   1                                  80202730
0086 0 4804            BSC   E                                  80202740
0087 0 302C      W302C DC    /302C     ACC NOT = 0000           80202750
                 *                                              80202760
0088 0 4820            BSC   Z                                  80202770
0089 0 3020      W302D DC    /302D     ACC NOT = 0000           80202780
                 *                                              80202790
008A 0 7001            MDX   A180     EXIT                     80202800
                 ********************************************   80202810
008B 0 FFFF      N140  OC    /FFFF     CONSTANT                 80202820
                 ********************************************   80202830
                 *                                              80202840
                 *                TEST LDING OF ONES ON ONES    80202850
                 *                                              80202860
                 ********************************************   80202870
008C 0 C0FE      A180  LO    N140                               80202880
008D 0 482C            BSC   +EZ                                80202890
008F 0 4810            BSC   -                                  80202900
008F 0 302E      W302E DC    /302E     ACC NOT = FFFF           80202910
                 *                                              80202920
0090 0 C0FA            LD    N140                               80202930
0091 0 482C            BSC   +EZ                                80202940
0092 0 4810            BSC   -                                  80202950
0093 0 302F      W302F OC    /302F     ACC NOT = FFFF           80202960
                 *                                              80202970
0094 0 1801            SRA   1                                  80202980
0095 0 4804            BSC   E                                  80202990
0096 0 7001            MDX   G181                               80203000
0097 0 3030      W3030 DC    /3030     ACC NOT = 7FFF           80203010
                 *                                              80203020
0098 0 1801      G181  SRA   1                                  80203030
0099 0 4804            BSC   E                                  80203040
009A 0 7001            MDX   G182                               80203050
009B 0 3031      W3031 DC    /3031     ACC NOT = 3FFF           80203060
                 *                                              80203070
009C 0 1801      G182  SRA   1                                  80203080
009D 0 4804            BSC   E                                  80203090
009E 0 7001            MDX   G183                               80203100
009F 0 3032      W3032 DC    /3032     ACC NOT = 1FFF           80203110
                 *                                              80203120
00A0 0 1801      G183  SRA   1                                  80203130
00A1 0 4804            BSC   E                                  80203140
00A2 0 7001            MDX   G184                               80203150
00A3 0 3033      W3033 DC    /3033     ACC NOT = 0FFF           80203160
                 *                                              80203170
00A4 0 1801      G184  SRA   1                                  80203180
00A5 0 4804            BSC   E                                  80203190
00A6 0 7001            MDX   G185                               80203200
00A7 0 3034      W3034 DC    /3034     ACC NOT = 07FF           80203210
                 *                                              80203220
00A8 0 1801      G185  SRA   1                                  80203230
00A9 0 4804            BSC   E                                  80203240
00AA 0 7001            MDX   G186                               80203250
00AB 0 3035      W3035 DC    /3035     ACC NOT = 03FF           80203260
                 *                                              80203270
00AC 0 1801      G186  SRA   1                                  80203280
00AD 0 4804            BSC   E                                  80203290
00AE 0 7001            MDX   G187                               80203300
                 *                                              80203310
00AF 0 3036      W3036 OC    /3036     ACC NOT = 01FF           80203320
00B0 0 1801      G187  SRA   1                                  80203330
00B1 0 4804            BSC   E                                  80203340
00B2 0 7001            MDX   G188                               80203350
00B3 0 3037      W3037 DC    /3037     ACC NOT = 00FF           80203360
                 *                                              80203370
00B4 0 1801      G188  SRA   1                                  80203380
00B5 0 4804            BSC   E                                  80203390
00B6 0 7001            MDX   G189                               80203400
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DIMAL HEADER TEST (CARD)
TEST1

```
0087 0 3038      W3039 OC    /3038     ACC NOT = 007F           80203410
                 *                                              80203420
0088 0 1801      G189  SRA   1                                  80203430
0089 0 4804            BSC   E                                  80203440
008A 0 7001            MDX   G18A                               80203450
0088 0 3039      W3039 DC    /3039     ACC NOT = 003F           80203460
                 *                                              80203470
008C 0 1801      G18A  SRA   1                                  80203480
008D 0 4804            BSC   E                                  80203490
008E 0 7001            MDX   G188                               80203500
008F 0 303A      W303A DC    /303A     ACC NOT = 001F           80203510
                 *                                              80203520
00C0 0 1801      G188  SRA   1                                  80203530
00C1 0 4804            BSC   E                                  80203540
00C2 0 7001            MDX   G18C                               80203550
00C3 0 3038      W3038 DC    /3038     ACC NOT = 000F           80203560
                 *                                              80203570
00C4 0 1801      G18C  SRA   1                                  80203580
00C5 0 4804            BSC   E                                  80203590
00C6 0 7001            MDX   G18D                               80203600
00C7 0 303C      W303C DC    /303C     ACC NOT = 0007           80203610
                 *                                              80203620
00C8 0 1801      G180  SRA   1                                  80203630
00C9 0 4804            BSC   E                                  80203640
00CA 0 7001            MDX   G18E                               80203650
00C8 0 3030      W303D DC    /3030     ACC NOT = 0003           80203660
                 *                                              80203670
00CC 0 1801      G18E  SRA   1                                  80203680
00CD 0 4804            BSC   E                                  80203690
00CE 0 7001            MDX   G18F                               80203700
00CF 0 303E      W303E DC    /303E     ACC NOT = 0001           80203710
                 *                                              80203720
00D0 0 1801      G18F  SRA   1                                  80203730
00D1 0 4804            BSC   E                                  80203740
00D2 0 303F      W303F DC    /303F     ACC NOT = 0000           80203750
                 *                                              80203760
00D3 0 4820            BSC   Z                                  80203770
00D4 0 3040      W3040 DC    /3040     ACC NOT = 0000           80203780
                 *                                              80203790
                 ********************************************   80203800
                 *                                              80203810
                 *                TEST ABILITY TO LDAO ZERDS    80203820
                 *                DN TDP DF ZERDS AND ONES D    80203830
                 *                TDP OF ZERDS                  80203840
                 *                                              80203850
                 ********************************************   80203860
00D5 0 C077            LO    N1D1                               80203870
00D6 0 4820            BSC   Z                                  80203880
00D7 0 3041      W3041 DC    /3041     ACC NOT = ZERO           80203890
                 *                                              80203900
00D8 0 C082            LD    N140                               80203910
00D9 0 482C            BSC   +EZ                                80203920
00DA 0 4810            BSC   -                                  80203930
00D8 0 3042      W3042 DC    /3042     ACC NOT = FFFF           80203940
                 *                                              80203950
                 ********************************************   80203960
                 *                                              80203970
                 *                TEST EDR DPERATION            80203980
                 *                                              80203990
                 ********************************************   80204000
00DC 0 C070            LD    N1D1                               80204010
00DD 0 4820            BSC   Z                                  80204020
00DE 0 3043      W3043 DC    /3043     ACC NOT = ZERO           80204030
                 *                                              80204040
00DF 0 F060            EDR   N1D1                               80204050
00E0 0 4820            BSC   Z                                  80204060
00E1 0 3044      W3044 OC    /3044     EDR OF 0 ANO 0 FAILED    80204070
                 *                                              80204080
```

DIMAL HEADER TEST (CARD)
TEST1

```
00E2 0  CCA8            LD      N140                                    80204090
00E3 0  F0A7            EDR     N140                                    80204100
00E4 0  4820            BSC     Z                                       80204110
00E5 0  3045    W3045   DC      /3045       EOR OF 1 AND 1 FAILED       80204120
                *                                                       80204130
00E6 0  F0A4            EDR     N140                                    80204140
00E7 0  482C            BSC     +EZ                                     80204150
00E8 0  4810            BSC     -                                       80204160
00E9 0  3046    W3046   DC      /3046       EOR OF 1 AND 0 FAILED       80204170
                *                                                       80204180
00EA 0  1601            SRA     1                                       80204190
00EB 0  F062            EDR     N1D2                                    80204200
00EC 0  4820            BSC     Z                                       80204210
00ED 0  3047    W3047   DC      /3047       EOR OF 1 AND 0 FAILED       80204220
                *                                                       80204230
00EE 0  C09C            LD      N140                                    80204240
00EF 0  F050            EOR     N1D1                                    80204250
00F0 0  482C            BSC     +EZ                                     80204260
00F1 0  4810            BSC     -                                       80204270
00F2 0  3048    W3048   DC      /3048       EOR OF 0 AND 1 FAILED       80204280
                *                                                       80204290
00F3 0  1601            SRA     1                                       80204300
00F4 0  F059            EDR     N1D2                                    80204310
00F5 0  4820            BSC     Z                                       80204320
00F6 0  3049    W3049   DC      /3049       EOR OF 0 AND 1 FAILED       80204330
                *                                                       80204340
                ********************************************          80204350
                *                                                       80204360
                *                   TEST OF ABILITY TO SET              80204370
                *                   F BIT TO ONE                        80204380
                *                                                       80204390
                ********************************************          80204400
00F7 00 C4000140        LD   L  N101                                    80204410
00F9 0  4820            BSC     Z                                       80204420
00FA 0  304A    W304A   DC      /304A       WRONG LOCATION LOADED       80204430
                *                                                       80204440
00FB 00 C4000150        LD   L  N1E0                                    80204450
00FD 0  F052            EOR     N1E0                                    80204460
00FE 0  4820            BSC     Z                                       80204470
00FF 0  3048    W304B   DC      /304B       WRONG LOCATION LOADED       80204480
                *                                                       80204490
                ********************************************          80204500
                *                                                       80204510
                *                   TEST OF INDIRECT ADDRESSING         80204520
                *                                                       80204530
                ********************************************          80204540
0100 00 C4800151        LD   I  N1F2                                    80204550
0102 0  4820            BSC     Z                                       80204560
0103 0  304C    W304C   DC      /304C       WRONG LOCATION LOADED       80204570
                *                                                       80204580
0104 00 C4800150        LD   I  N1E0                                    80204590
0106 0  F049            EOR     N1E0                                    80204600
0107 0  4820            BSC     Z                                       80204610
0108 0  3040    W304D   DC      /304D       WRONG LOCATION LOADED       80204620
                *                                                       80204630
                ********************************************          80204640
                *                                                       80204650
                *                   TEST OF BSC LONG FORM AND           80204660
                *                   INDIRECT OPERATION                  80204670
                *                                                       80204680
                ********************************************          80204690
0109 00 4C000210        BSC  L  G200                                    80204700
0108 0  304E    W304E   DC      /304E       BSC FELL THROUGH            80204710
010C 0  304F    W304F   DC      /304F       BSC SKPD-SHOULD BRNC        80204720
                *                                                       80204730
010D 0  C041    G200    LD      N1D0                                    80204740
010E 00 4C040112        BSC  L  G201,E                                  80204750
0110 0  3050    W3050   DC      /3050       BSC E FELL THROUGH          80204760
```


DIMAL HEADER TEST (CARD)
TEST1

```
0111 0  3051    W3051   DC      /3051       BSC SKPD-SHOULD BRNC        80204770
                *                                                       80204780
0112 00 4C080116        G201    BSC  L  G202,+                          80204790
0114 0  3052    W3052   DC      /3052       BSC + FELL THROUGH          80204800
0115 0  3053    W3053   DC      /3053       BSC SKPD-SHOULD BRNC        80204810
                *                                                       80204820
0116 00 4C200114        G202    BSC  L  G203,Z                          80204830
0118 0  3054    W3054   DC      /3054       BSC Z FELL THROUGH          80204840
0119 0  3055    W3055   DC      /3055       BSC SKPD-SHOULD BRNC        80204850
                *                                                       80204860
011A 00 4C10011D        G203    BSC  L  W3056,-                         80204870
011C 0  7001            MDX     G204                                    80204880
011D 0  3056    W3056   DC      /3056       BSC SKPD-SHOULD NOT         80204890
                *                                                       80204900
011E 0  2003            G204    LDS     3                               80204910
011F 00 4C020123        BSC  L  G205,C                                  80204920
0121 0  3057    W3057   DC      /3057       BSC C FELL THROUGH          80204930
0122 0  3058    W3058   DC      /3058       BSC SKPD-SHOULD BRNC        80204940
                *                                                       80204950
0123 00 4C010127        G205    BSC  L  G208,D                          80204960
0125 0  3059    W3059   DC      /3059       BSC D FELL THROUGH          80204970
0126 0  305A    W305A   DC      /305A       BSC SKPD-SHOULD BRNC        80204980
                *                                                       80204990
0127 00 4CC1012A        G208    BSC  L  W305B,D                         80205000
0129 0  7001            MDX     G206                                    80205010
012A 0  305B    W305B   DC      /3058       BSC BRNCD-SHOULD NOT        80205020
                *                                                       80205030
012B 0  2000            G206    LDS     0                               80205040
012C 00 4C02012F        BSC  L  W305C,C                                 80205050
012E 0  7001            MDX     G207                                    80205060
012F 0  305C    W305C   DC      /305C       BSC BRNCD-SHOULD NOT        80205070
                *                                                       80205080
0130 00 4C010133        G207    BSC  L  W305D,D                         80205090
0132 0  7001            MDX     G209                                    80205100
0133 0  305D    W305D   DC      /305D       BSC BRNCD-SHOULD NOT        80205110
                *                                                       80205120
0134 0  C018            G209    LD      N1D1                            80205130
0135 00 4C180139        BSC  L  G20A,+-                                 80205140
0137 0  305E    W305E   DC      /305E       BSC +- FELL THROUGH         80205150
0138 0  305F    W305F   DC      /305F       BSC SKPD-SHOULD BRNC        80205160
                *                                                       80205170
0139 0  C015            G20A    LD      N1D0                            80205180
013A 00 4C18013D        BSC  L  W3060,+-                                80205190
013C 0  7001            MDX     G20D                                    80205200
013D 0  3060    W3060   DC      /3060       BSC BRNCHED-SHOULDNT        80205210
                *                                                       80205220
013E 0  C013            G20D    LD      N202                            80205230
013F 00 4C180142        BSC  L  W3061,+-                                80205240
0141 0  7001            MDX     G208                                    80205250
0142 0  3061    W3061   DC      /3061       BSC BRNCHED-SHOULDNT        80205260
                *                                                       80205270
0143 00 C4000011        G208    LD   L  17          CALL READ IOCC      80205280
0145 0  F00C            EDR     N202        CHANGE SECTOR               80205290
0146 00 D4000011        STD  L  17                                      80205300
                *                                                       80205310
0148 00 4C800153        G20C    BSC  I  N203        RETURN TO CALL      80205320
014A 0  3062    W3062   DC      /3062       INDIRECT BSC FAILED         80205330
014B 0  3063    W3063   DC      /3063       INDIRECT BSC FAILED         80205340
                *                                                       80205350
014C 0  70FB            MDX     G20C        TO RETRY BSC I N203         80205360
                ********************************************          80205370
014D 0  0000    N1D1    DC      /0000       CONSTANT                    80205380
014E 0  7FFF    N102    DC      /7FFF       CONSTANT                    80205390
014F 0  FFFF    N1D0    DC      /FFFF       CONSTANT                    80205400
0150 0  0150    N1E0    DC      N1E0        CONSTANT                    80205410
0151 0  014D    N1F2    DC      N1D1        CONSTANT                    80205420
0152 0  0001    N202    DC      /0001       CONSTANT                    80205430
0153 0  0002    N203    DC      /0002       CONSTANT                    80205440
```

DIKAL HEADER TEST (CARD)
TEST1

```
                    ********************************************      80205450
0154    0140              END  X  *-PIO      END CARD NOT USED  8020545 80205460
```


DIKAL HEADER TEST (CARD)
TEST1

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A0C0	0028	0022
A080	0016	0015
A180	008C	008A
G0C1	0030	0020
G0C2	0033	0031
G080	0018	0016
G081	0018	0018
G082	0020	0018
G083	0022	0023
G084	0023	0020
G14A	006D	0068
G148	0071	006F
G14C	0075	0073
G14D	0079	0077
G14E	0070	0078
G14F	0081	007F
G140	0046	0044
G141	0049	0047
G142	0040	0048
G143	0051	004F
G144	0055	0053
G145	0059	0057
G146	0050	0058
G147	0061	005F
G148	0065	0063
G149	0069	0067
G150	0085	0083
G18A	00BC	00BA
G188	00C0	00BE
G18C	00C4	00C2
G180	00C8	00C6
G18E	00CC	00CA
G18F	0000	00CE
G181	0098	0096
G182	009C	009A
G183	00A0	009E
G184	00A4	00A2
G185	00A8	00A6
G186	00AC	00AA
G187	0080	00AE
G188	0084	00B2
G189	00B8	0086
G20A	0139	0135
G208	0143	0141
G20C	0148	014C
G20D	013E	013C
G200	010D	0109
G201	0112	010E
G202	0116	0112
G203	011A	0116
G204	011E	011C
G205	0123	011F
G206	0128	0129
G207	0130	012E
G208	0127	0123
G209	0134	0132
N1D0	014F	010D,0139
N1D1	014D	00D5,000C,000F,09EF,00F7,0134,0151
N102	014E	00E8,00F4
N1E0	0150	00F8,00FD,0104,0106,0150
N1F2	0151	0100
N100	002F	0038,0038
N140	0088	0040,008C,0090,00D8,00E2,00E3,00E6,00EE
N202	0152	013E,0145
N203	0153	0148

DIMAL HEADER TEST (CARD)
TEST1

PIO	0014	6154
W300A	001F	300A
W3008	0021	300B
W300C	0024	300C
W3000	0025	3000
W300E	0026	300E
W300F	0027	300F
W3004	0017	3004
W3005	0019	3005
W3006	001A	3006
W3007	001C	3007
W300B	001D	3008
W3009	001E	3009
W301A	0042	301A
W301B	0045	301B
W301C	0048	301C
W301D	004C	3010
W301E	0050	301E
W301F	0054	301F
W3010	0028	3010
W3011	0029	3011
W3012	002A	3012
W3013	002E	3013
W3014	0032	3014
W3015	0034	3015
W3016	0037	3016
W3017	003A	3017
W3018	0030	301B
W3019	003F	3019
W302A	0080	302A
W3025	0084	302B
W302C	0047	302C
W302D	0089	3020
W302E	008F	302E
W302F	0093	302F
W3020	0058	3020
W3021	005C	3021
W3022	0060	3022
W3023	0064	3023
W3024	006B	3024
W3025	006C	3025
W3026	0070	3026
W3027	0074	3027
W3028	0078	302B
W3029	007C	3029
W303A	008F	303A
W303B	00C3	303B
W303C	00C7	303C
W303D	00C8	3030
W303E	00CF	303E
W303F	0002	303F
W3030	0097	3030
W3031	009B	3031
W3032	009F	3032
W3033	00A3	3033
W3034	00A7	3034
W3035	00AB	3035
W3036	00AF	3036
W3037	0083	3037
W3038	00B7	303B
W3039	00B8	3039
W304A	00FA	304A
W304B	00FF	304B
W304C	0103	304C
W3040	010B	304D
W304F	0108	304E
W304F	010C	304F
W3040	0004	3040

DIMAL HEADER TEST (CARD)
TEST1

W3041	0007	3041
W3042	00D8	3042
W3043	000E	3043
W3044	00E1	3044
W3045	00E5	3045
W3046	00E9	3046
W3047	00ED	3047
W3048	00F2	304B
W3049	00F6	3049
W305A	0126	305A
W305B	012A	3058,0127
W305C	012F	305C,012C
W3050	0133	3050,0130
W305E	0137	305E
W305F	0138	305F
W3050	0110	3050
W3051	0111	3051
W3052	0114	3052
W3053	0115	3053
W3054	0118	3054
W3055	0119	3055
W3056	011C	3056,011A
W3057	0121	3057
W3058	0122	305B
W3059	0125	3059
W3060	0130	3060,013A
W3061	0142	3061,013F
W3062	014A	3062
W3063	014B	3063

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                        ABS
028C                    ORG     /3064                                   80200020
                    ********************************************        80200030
                    *           WAITS       ERROR COMMENTS       *      80200040
                    ********************************************        80200050
3064 0  0018            DC      W3064+1     BSI SKPD-SHOULD BRNC        80200060
3065 0  0010            DC      W3065+1     BSI NOT STORED I REG        80200070
3066 0  0020            DC      W3066+1     BSI + FELL THROUGH          80200080
3067 0  0021            DC      W3067+1     BSI SKPD-SHOULD BNC         80200090
3068 0  0027            DC      W3068+1     BSI NOT STORE I REG         80200100
3069 0  002E            DC      W3069+1     STORE FAILED                80200110
306A 0  0033            DC      W306A+1     D E SW NOT ZERO             80200120
306B 0  0038            DC      W306B+1     D E SW NOT ZERO             80200130
306C 0  003F            DC      W306C+1     S/P SW NOT ZERO             80200140
306D 0  0045            DC      W306D+1     S/P SW NOT ZERO             80200150
306E 0  004B            DC      W306E+1     SRA 16 FAILED               80200160
306F 0  0052            DC      W306F+1     SRA 15 FAILED               80200170
3070 0  0059            DC      W3070+1     SRA 1 FAILED                80200180
3071 0  0060            DC      W3071+1     SRA 1 FAILED                80200190
3072 0  006A            DC      W3072+1     COMB SRA FAILED             80200200
3073 0  0084            DC      W3073+1     AND OF 0 AND 0 FAILED       80200210
3074 0  0089            DC      W3074+1     AND OF 0 AND 1 FAILED       80200220
3075 0  008F            DC      W3075+1     AND OF 1 AND 0 FAILED       80200230
3076 0  0096            DC      W3076+1     AND OF 1 AND 1 FAILED       80200240
3077 0  009C            DC      W3077+1     OR OF 0 AND 0 FAILED        80200250
3078 0  00A2            DC      W3078+1     OR OF 0 AND 1 FAILED        80200260
3079 0  00A9            DC      W3079+1     OR OF 1 AND 1 FAILED        80200270
307A 0  00B3            DC      W307A+1     ACC DISTROYED AFTER         80200280
307B 0  00B9            DC      W307B+1     ADD TO MEM FAILED           80200290
307C 0  00C1            DC      W307C+1     ALL 0 THRU 0 FAILED         80200300
307D 0  00C7            DC      W307D+1     ALL 1 THRU 0 FAILED         80200310
307E 0  00CE            DC      W307E+1     SRT 32-A REG FAILED         80200320
307F 0  00D4            DC      W307F+1     SRT 32-Q REG FAILED         80200330
3080 0  00DA            DC      W3080+1     SRT 32-A REG FAILED         80200340
3081 0  00DF            DC      W3081+1     SRT 32-Q REG FAILED         80200350
3082 0  00E5            DC      W3082+1     SRT 16-A REG FAILED         80200360
3083 0  00EB            DC      W3083+1     SRT 16-Q REG FAILED         80200370
3084 0  00F5            DC      W3084+1     SERIES SRT FAILED           80200380
3085 0  00FA            DC      W3085+1     SERIES SRT FAILED           80200390
                    ********************************************        80200400
3086                    ORG     20                                      80200410
                    ********************************************        80200420
0014 0  0200        PID OC      /0200       PID                         80200430
                    *                                                   80200440
0154                RAREA EQU   340                                     80200450
                    ********************************************        80200460
                    *                                          *        80200470
                    *              TEST SHORT AND LONG FORM    *        80200480
                    *              BSI                         *        80200490
                    *                                          *        80200500
                    ********************************************        80200510
0015 0  4002            BSI     N241                                    80200520
0016 0  0016        N240 OC     N240                                    80200530
0017 0  3064        W3064 DC    /3064       BSI SKPD-SHOULD BRNC        80200540
                    *                                                   80200550
0018 0  0000        N241 OC     /0000                                   80200560
0019 0  C0FE             LD     N241                                    80200570
001A 0  F0F8             EOR    N240                                    80200580
001B 0  4820             BSC    Z                                       80200590
001C 0  3065        W3065 OC    /3065       BSI NOT STORED I REG        80200600
                    *                                                   80200610
001D 00 44080022         BSI  L N243,+                                   80200620
001F 0  3066        W3066 OC    /3066       BSI + FELL THROUGH          80200630
0020 0  3067        W3067 DC    /3067       BSI SKPD-SHOULD BNC         80200640
                    *                                                   80200650
0021 0  001F        N242  OC    W3066                                   80200660
0022 0  0000        N243  OC    /0000                                   80200670
0023 0  C0FE              LD    N243                                    80200680
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0024 0  F0FC             EOR    N242                                    80200690
0025 0  4820             BSC    Z                                       80200700
0026 0  3068        W3068 OC    /3068       BSI NOT STORE I REG         80200710
                    *                                                   80200720
                    ********************************************        80200730
                    *                                          *        80200740
                    *              TEST OF INSTR REQUIRED FOR  *        80200750
                    *              ERROR CONTROL               *        80200760
                    *                                          *        80200770
                    ********************************************        80200780
0027 0  C044             LO     F900                                    80200790
0028 0  D048             STO    F912                                    80200800
0029 0  C050             LD     N300                                    80200810
002A 0  C049             LO     F912                                    80200820
002B 0  F040             EOR    F900                                    80200830
002C 0  4820             BSC    Z                                       80200840
002D 0  3069        W3069 DC    /3069       STORE FAILED                80200850
                    *                                                   80200860
                    ********************************************        80200870
                    *                                          *        80200880
                    *              TEST READ AND SENSE OF DATA ENTRY   80200890
                    *              AND SENSE/PROGRAM SWITCHES  *        80200900
                    *                                          *        80200910
                    ********************************************        80200920
002E 0  083D        G904  XIO   F900         READ DATA ENTRY SW         80200930
002F 0  C03E              LD    F901                                    80200940
0030 00 4C180034          BSC  L G905,+-      8CH IF OKAY                80200950
0032 0  306A        W306A DC    /306A       D E SW NOT ZERO             80200960
0033 0  70FA              MDX   G904        LOOP                        80200970
                    *                                                   80200980
0034 0  0839        G905  XIO   F901                                    80200990
0035 00 4C180039          BSC  L G906,+-      8CH IF OKAY                80201000
0037 0  3068        W306B DC    /3068       D E SW NOT ZERO             80201010
0038 0  70F8              MDX   G905        LOOP                        80201020
                    *                                                   80201030
0039 0  0836        G906  XIO   F902                                    80201040
003A 0  C037              LD    F903                                    80201050
003B 0  E039              AND   F923                                    80201060
003C 00 4C180040          BSC  L G907,+-      8CH IF OKAY                80201070
003E 0  306C        W306C OC    /306C       S/P SW NOT ZERO             80201080
003F 0  70F9              MDX   G906        LOOP                        80201090
                    *                                                   80201100
0040 0  0831        G907  XIO   F903                                    80201110
0041 0  E033              AND   F923                                    80201120
0042 00 4C180046          BSC  L A280,+-      8CH IF OKAY                80201130
0044 0  3060        W306D OC    /306D       S/P SW NOT ZERO             80201140
0045 0  70FA              MDX   G907        LOOP                        80201150
                    ********************************************        80201160
                    *                                          *        80201170
                    *              BEGINING OF SECTION OF      *        80201180
                    *              PROGRAM USING COMMON ERROR  *        80201190
                    *              CONTROL ROUTINE             *        80201200
                    *                                          *        80201210
                    ********************************************        80201220
                    *                                          *        80201230
                    *              TEST OF SRA OPERATION       *        80201240
                    *                                          *        80201250
                    ********************************************        80201260
0046 0  C034        A280  LO    N303                                    80201270
0047 0  1810              SRA   16                                      80201280
0048 00 44000115          BSI  L F000         CHECK ERR OR LOOP SW       80201290
004A 0  306E        W306E OC    /306E       SRA 16 FAILED               80201300
004B 0  70FA              MDX   A280        LOOP                        80201310
                    ********************************************        80201320
004C 0  C029        A281  LD    N281                                    80201330
004D 0  180F              SRA   15                                      80201340
004E 0  F02F              EOR   N282                                    80201350
004F 00 44000115          BSI  L F000         CHECK ERR OR LOOP SW       80201360
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0051 0  306F        W306F DC      /306F       SRA 15 FAILED              80201370
0052 0  70F9              MDX     A281        LOOP                       80201380
                    ***************************************************  80201390
0053 0  C023        A282  LD      N283                                   80201400
0054 0  1801              SRA     1                                      80201410
0055 0  F022              EOR     N284                                   80201420
0056 00 44000115          BSI  L  F000        CHECK ERR OR LDOP SW       80201430
0058 0  3070        W3070 OC      /3070       SRA 1 FAILED               80201440
0059 0  70F9              MDX     A282        LDOP                       80201450
                    ***************************************************  80201460
005A 0  C010        A283  LD      N284                                   80201470
005B 0  1801              SRA     1                                      80201480
005C 0  F01C              EOR     N285                                   80201490
005D 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80201500
005F 0  3071        W3071 OC      /3071       SRA 1 FAILED               80201510
0060 0  70F9              MDX     A283        LOOP                       80201520
                    ***************************************************  80201530
0061 0  C014        A284  LD      N281                                   80201540
0062 0  1801              SRA     1                                      80201550
0063 0  1802              SRA     2                                      80201560
0064 0  1804              SRA     4                                      80201570
0065 0  1808              SRA     8                                      80201580
0066 0  F017              EOR     N282                                   80201590
0067 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80201600
0069 0  3072        W3072 OC      /3072       COM8 SRA FAILED            80201610
006A 0  70F6              MDX     A284        LOOP                       80201620
                    *                                                    80201630
006B 0  7013              MDX     A2C0        EXIT                       80201640
                    ***************************************************  80201650
006C    0000              BSS  E                                         80201660
006C 0  C06E        F900  OC      F901        READ ADDRESS               80201670
006D 0  0240              DC      /0240       READ OES IOCC              80201680
006E 0  0000        F901  OC      /0000       BIT SWITCH STORAGE         80201690
006F 0  0740              DC      /0740       SENSE OES IOCC             80201700
0070 0  0072        F902  DC      F903        READ ADDRESS               80201710
0071 0  0260              DC      /0260       READ S/P IOCC              80201720
0072 0  0000        F903  DC      /0000       S/P SWITCH STORAGE         80201730
0073 0  0760              DC      /0760       SENSE S/P IOCC             80201740
                    ***************************************************  80201750
0074 0  0000        F912  DC      /0000       STORAGE                    80201760
0075 0  FF00        F923  DC      /FF00       CONSTANT                   80201770
0076 0  8000        N281  DC      /8000       CONSTANT                   80201780
0077 0  AAAA        N283  DC      /AAAA       CONSTANT                   80201790
0078 0  5555        N284  DC      /5555       CONSTANT                   80201800
0079 0  2AAA        N285  DC      /2AAA       CONSTANT                   80201810
007A 0  0000        N300  DC      /0000       CONSTANT                   80201820
0078 0  FFFF        N303  DC      /FFFF       CONSTANT                   80201830
007C 0  3000        N842  DC      /3000       STORAGE                    80201840
007D 0  3001        N846  DC      /3001       CONSTANT                   80201850
007E 0  0001        N282  DC      /0001       CONSTANT                   80201860
                    ***************************************************  80201870
                    *                                                    80201880
                    *              TEST DF AND FUNCTION                  80201890
                    *                                                    80201900
                    ***************************************************  80201910
007F 0  C0FA        A2C0  LD      N300                                   80201920
0080 0  E0F9              AND     N300                                   80201930
0081 00 44000115          BSI  L  F000        CHECK ERR OR LDDP SW       80201940
0083 0  3073        W3073 OC      /3073       AND DF 0 AND 0 FAILED      80201950
0084 0  70FA              MDX     A2C0        LDDP                       80201960
0085 0  E0F5              AND     N303                                   80201970
0086 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80201980
0088 0  3074        W3074 OC      /3074       AND DF 0 AND 1 FAILED      80201990
0089 0  70F5              MDX     A2C0                                   80202000
                    ***************************************************  80202010
008A 0  C0F0        A2C8  LD      N303                                   80202020
008B 0  E0EE              AND     N300                                   80202030
008C 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80202040
```



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008E 0  3075        W3075 DC      /3075       AND DF 1 AND 0 FAILED      80202050
008F 0  70FA              MDX     A2C8        LDDP                       80202060
                    ***************************************************  80202070
0090 0  C0EA        A2CC  LD      N303                                   80202080
0091 0  E0E9              AND     N303                                   80202090
0092 0  F0E8              EOR     N303                                   80202100
0093 00 44000115          BSI  L  F000        CHECK ERR OR LDDP SW       80202110
0095 0  3076        W3076 OC      /3076       AND DF 1 AND 1 FAILED      80202120
0096 0  70F9              MDX     A2CC        LDDP                       80202130
                    ***************************************************  80202140
                    *                                                    80202150
                    *              TEST DF OR FUNCTION                   80202160
                    *                                                    80202170
                    ***************************************************  80202180
0097 0  C0E2        A300  LD      N300                                   80202190
0098 0  E8E1              OR      N300                                   80202200
0099 00 44000115          BSI  L  F000        CHECK ERR OR LDDP SW       80202210
009B 0  3077        W3077 OC      /3077       OR DF 0 AND 0 FAILED       80202220
009C 0  70FA              MDX     A300        LDDP                       80202230
009D 0  E8DD              OR      N303                                   80202240
009E 0  F00C              EOR     N303                                   80202250
009F 00 44000115          BSI  L  F000        CHECK ERR OR LDDP SW       80202260
00A1 0  3078        W3078 OC      /3078       OR DF 0 AND 1 FAILED       80202270
00A2 0  70F4              MDX     A300                                   80202280
                    ***************************************************  80202290
00A3 0  C0D7        A304  LD      N303                                   80202300
00A4 0  E8D6              OR      N303                                   80202310
00A5 0  F0D5              EOR     N303                                   80202320
00A6 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80202330
00A8 0  3079        W3079 OC      /3079       OR DF 1 AND 1 FAILED       80202340
00A9 0  70F9              MDX     A304        LDDP                       80202350
                    ***************************************************  80202360
                    *                                                    80202370
                    *            TEST OF MDX LONG FORM INST              80202380
                    *                                                    80202390
                    ***************************************************  80202400
00AA 0  C067        G842  LD      DSW                                    80202410
00A8 0  D000              STO     N842                                   80202420
00AC 0  C0BF              LD      F900                                   80202430
00AD 00 7401007C          MDX  L  N842,1                                 80202440
00AF 0  F0EC              EOR     F900                                   80202450
0080 00 44000115          BSI  L  F000        CHECK ERR DR LDDP SW       80202460
0082 0  307A        W307A OC      /307A       ACC DISTRDYED AFTER        80202470
0083 0  70F6              MDX     G842                                   80202480
0084 0  C0C7              LD      N842                                   80202490
0085 0  F0C7              EOR     N846                                   80202500
0086 00 44000115          BSI  L  F000        CHECK ERR OR LOOP SW       80202510
00B8 0  3078        W3078 OC      /3078       ADD TO MEM FAILED          80202520
0089 0  70F0              MDX     G842                                   80202530
                    ***************************************************  80202540
                    *                                                    80202550
                    *              TEST OF RTE 16 OPERATION              80202560
                    *                                                    80202570
                    ***************************************************  80202580
008A 0  C0BF        A340  LD      N300                                   80202590
00BB 0  1800              RTE     16                                     80202600
00BC 0  C08E              LD      N303                                   80202610
00BD 0  1800              RTE     16                                     80202620
00BE 00 44000115          BSI  L  F000        CHECK ERR DR LDDP SW       80202630
00C0 0  307C        W307C OC      /307C       ALL 0 THRU 0 FAILED        80202640
00C1 0  70F8              MDX     A340        LOOP                       80202650
00C2 0  1800              RTE     16                                     80202660
00C3 0  F087              EOR     N303                                   80202670
00C4 00 44000115          BSI  L  F000        CHECK ERR OR LDDP SW       80202680
00C6 0  307D        W307D OC      /307D       ALL 1 THRU 0 FAILED        80202690
00C7 0  70F2              MDX     A340        LOOP                       80202700
                    ***************************************************  80202710
                    *                                                    80202720
```

```
                        *
                        *                    TEST OF SRT OPERATION
                        *
                        ***********************************************
00C8 0  C0AD    A380    LD      N281
00C9 0  18A0            SRT     32
00CA 0  F080            EOR     N303
00CB 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00CD 0  307F    W307E   DC      /307E       SRT 32-A REG FAILED
00CE 0  70F9            MDX     A380        LOOP
00CF 0  18D0            RTE     16
0000 0  F0AA            EOR     N303
00D1 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00D3 0  307F    W307F   DC      /307F       SRT 32-Q REG FAILED
0004 0  70F3            MDX     A380        LOOP
                        ***********************************************
00D5 0  C03E    A384    LD      N382
00D6 0  18A0            SRT     32
00D7 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00D9 0  3080    W3080   DC      /3080       SRT 32-A REG FAILED
00DA 0  70FA            MDX     A384        LOOP
00DB 0  18D0            RTE     16
00DC 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00DE 0  3081    W3081   DC      /3081       SRT 32-Q REG FAILED
00DF 0  70F5            MDX     A384        LOOP
                        ***********************************************
00E0 0  C097    A388    LD      N284
00E1 0  188F            SRT     15
00E2 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00E4 0  3082    W3082   DC      /3082       SRT 15-A REG FAILED
00E5 0  70FA            MDX     A388        LOOP
00E6 0  18C0            RTE     16
00E7 0  F03F            EOR     N283
00E8 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW
00EA 0  3083    W3083   DC      /3083       SRT 15-Q REG FAILED
00EB 0  70F4            MDX     A388        LOOP
                        ***********************************************
00EC 0  C08B    A38C    LD      N264
00ED 0  1880            SRT     0
00EE 0  1882            SRT     2
00EF 0  1884            SRT     4
00F0 0  1886            SRT     6
00F1 0  1888            SRT     8
00F2 0  188A            SRT     10
00F3 0  4021            BSI     F000        CHECK ERR OR LOOP SW
00F4 0  3084    W3084   DC      /3084       SERIES SRT FAILED
00F5 0  70F6            MDX     A38C        LOOP
00F6 0  18D0            RTE     16
00F7 0  F086            EDR     N282
00F8 0  401C            BSI     F000        CHECK ERR OR LOOP SW
00F9 0  3085    W3085   DC      /3085       SERIES SRT FAILED
00FA 0  70F1            MDX     A38C        LOOP
                        ***********************************************
00F8 00 C4000011        LD   L  /11
00FD 0  E813            DR      READ+1
00FE 0  D012            STO     READ+1
                *
00FF 00 C400000D        LD   L  /D
0101 0  E811            OR      DSW+1
0102 0  D010            STO     DSW+1
                *
0103 0  C008            LD      N383
0104 0  D04F            STO     RAREA
0105 0  1000            NOP
0106 0  1000            NOP
                *
0107 00 74010111    CNTL  MDX L READ+1,1    AOJUST READ SECTOR
0109 0  0806            X10     READ
```



```
010A 0  0807    CHECK XIO     DSW
0108 0  1002          SLA     2
010C 0  4828          BSC     +Z
010D 0  70FC          MDX     CHECK       8CH NOT READY
010E 0  7048          MDX     RAREA+3     8CH TO PROG
                *
010F 0  0141    N383  DC      321
0110    0000          BSS  E  0
0110 0  0154    READ  DC      RAREA       READ AREA
0111 0  0601          OC      /0601       DISC IOCC
0112 0  3000    OSW   DC      /3000       CONSTANT
0113 0  0701          DC      /0701       SENSE OSW IOCC
0114 0  4000    N382  OC      /4000       CONSTANT
                *
                ***********************************************
                *
                *                ERROR CONTROL SUB-ROUTINE
                *
                ***********************************************
                *
                *               80- BYPASS WAIT
                *               81- LOOP INSTRUCTION
                *
0115 0  0000    F000  DC      /0000       RETURN ADDRESS
0116 0  4818          BSC     +-          IS ACC ZERO
0117 0  7005          MDX     OUT         * YES
0118 00 0C00006E      XIO  L  F901        * NO
                *
011A 0  4810          BSC     -           IS BIT 0 ON
011B 0  7008          MDX     OUT2        * NO
011C 0  7007          MDX     OUT1        * YES
                *
011D 00 0C00006E  OUT XIO  L  F901
011F 0  1001          SLA     1           CHECK BIT 1
0120 0  4828          BSC     +Z          IS BIT 1 ON
0121 0  7002          MDX     OUT1        * YES
0122 00 74010115      MDX  L  F000,1      * NO
0124 00 74010115  OUT1 MDX L  F000,1
0126 0  1010          SLA     16          CLEAR ACC
0127 00 4C800115  OUT2  BSC  1  F000      RETURN TO PROGRAM
                *
                ***********************************************
012A    0115          END  X  *-PID       END CARD NOT USED  8020382
```

DIMAL HEADER TEST (CARD)
TEST2

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A2CC	0090	0096
A2CD	007F	0068,0084,0089
A2C8	008A	008F
A280	0046	0042,0048
A281	004C	0052
A282	0053	0059
A283	005A	0060
A284	0061	006A
A300	0097	009C,00A2
A304	00A3	00A9
A340	00BA	00C1,00C7
A38C	00EC	00F5,00FA
A380	00C8	00CE,00D4
A384	0005	00DA,00DF
A388	00E0	00E5,00E8
CHECK	010A	010D
CNTL	0107	
DSW	0112	00AA,0101,0102,010A
F000	0115	0048,004F,0056,0050,0067,0081,0086,008C,0093,0099, 009F,00A6,0060,0086,005E,00C4,00C8,00D1,00D7,00DC, 00E2,00E8,00F3,00FE,0122,0124,0127
F900	006C	0027,002B,002E,00AC,00AF
F901	00BE	002F,0034,006C,0118,011D
F902	0070	0039
F903	0072	003A,0040,0070
F912	0074	0028,002A
F923	0075	0038,0041
G842	00AA	00B3,00B9
G904	002E	0033
G905	0034	0030,0038
G906	0039	0035,003F
G907	0040	003C,0045
N240	0016	0016,001A
N241	0018	0015,0019
N242	0021	0024
N243	0022	001D,0023
N281	0076	004C,0061,00C8
N282	0075	004E,0066,00F7
N283	0077	0053,00E7
N284	0078	0055,005A,00E0,00EC
N285	0079	005C
N300	007A	0029,007F,0080,0088,0097,0096,00BA
N303	007B	0046,0085,008A,0090,0091,0092,009D,009E,00A3,00A4, 00A5,00BC,00C3,00CA,00DD
N382	0114	00D5
N383	010F	0103
N842	007C	00A9,00AD,00B4
N846	007D	00B5
OUT	0110	0117
OUT1	0124	011C,0121
OUT2	0127	0118
PID	0014	0129
RAREA	0154	0104,010E,0110
READ	0110	00FD,00FE,0107,0109
W306A	0032	306A
W306B	0037	3068
W306C	003E	306C
W306D	0044	306D
W306E	004A	306E
W306F	0051	306F
W3064	0017	3064
W3065	001C	3065
W3066	001F	3066,0021
W3067	0020	3067
W3068	0026	3068

DIMAL HEADER TEST (CARD)
TEST2

W3069	002D	3069
W307A	0082	307A
W307B	0088	3078
W307C	00C0	307C
W307D	00C6	307D
W307E	00CD	307E
W307F	00D3	307F
W3070	0058	3070
W3071	005F	3071
W3072	0069	3072
W3073	0083	3073
W3074	0088	3074
W3075	009E	3075
W3076	0095	3076
W3077	009B	3077
W3078	00A1	3078
W3079	00A8	3079
W3080	00D9	3080
W3081	00DE	3081
W3082	00E4	3082
W3083	00EA	3083
W3084	00F4	3084
W3085	00F9	3085

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                        A8S                                                 80200010
028C                    ORG     /3086                                       80200020
                    ********************************************            80200030
                    *           WAITS       ERROR COMMENTS       *          80200040
                    ********************************************            80200050
3086 0  015F            DC      W3086+1     RTE 15-0 TO A FAILED            80200060
3087 0  0165            DC      W3087+1     RTE 15-A TO Q FAILED            80200070
3088 0  C175            DC      W3088+1     SERIES RTE FAILED               80200080
3089 0  C17A            DC      W3089+1     SERIES RTE FAILED               80200090
308A 0  C18F            DC      W308A+1     SLA 16-CARRY FAILED             80200100
308B 0  0196            DC      W308B+1     SL1 16-166 3T 4 0 R             80200110
308C 0  01A2            DC      W308C+1     SLA 16-CARRY FAILED             80200120
308D 0  01A7            DC      W308D+1     SLA 16-AFFECTED Q REG           80200130
308E 0  01B3            DC      W308E+1     SLA 1-CARRY FAILED              80200140
308F 0  01B8            DC      W308F+1     SRA 1-AFFECTED Q REG            80200150
3090 0  01C3            DC      W3090+1     SLA 1-CARRY FAILED              80200160
3091 0  01C8            DC      W3091+1     SLA 1-AFFECTED Q REG            80200170
3092 0  01D8            DC      W3092+1     COMB SLA-CARRY FAILED           80200180
3093 0  01DD            DC      W3093+1     COMB SLA-AFFECTED Q             80200190
3094 0  01EF            DC      W3094+1     SLT 32-CARRY FAILED             80200200
3095 0  01F4            DC      W3095+1     SLT 32-Q REG FAILED             80200210
3096 0  01FF            DC      W3096+1     SLT 16-CARRY FAILED             80200220
3097 0  0204            DC      W3097 1     SLT 16-Q REG FAILED             80200230
3098 0  020F            DC      W3098+1     SLT 15-CARRY FAILED             80200240
3099 0  0215            DC      W3099+1     SLT 15-Q REG FAILED             80200250
309A 0  0225            DC      W309A+1     COMB SLT-CARRY FAILED           80200260
309B 0  022A            DC      W309B+1     COMB SLT-Q REG FAILE            80200270
309C 0  0239            DC      W309C+1     STORE ZEROS FAILED              80200280
3090 0  0242            DC      W3090+1     STO ONES FAILED                 80200290
309E 0  C24D            DC      W309E+1     STS FAILED TO STORE             80200300
309F 0  0255            DC      W309F+1     ACC GONE AFT LOS-STS            80200310
30A0 0  0250            DC      W30A0+1     STS NOT CLEAR CARRY             80200320
30A1 0  0265            DC      W30A1+1     STS NOT CLEAR OVERFLW           80200330
30A2 0  026B            DC      W30A2+1     STS FAILED TO STORE             80200340
30A3 0  0274            DC      W30A3+1     STS FAILED TO STORE             80200350
30A4 0  0279            DC      W30A4+1     STS NOT CLEAR CARRY             80200360
30A5 0  0282            DC      W30A5+1     STS FAILED TO STORE             80200370
30A6 0  0287            DC      W30A6+1     STS NOT CLEAR OVERFL            80200380
                    ********************************************            80200390
                    *                                                       80200400
30A7                    ORG     342                                         80200410
                    ********************************************            80200420
0156 0  0200        PIO OC      /0200       PID                             80200430
                    *                                                       80200440
0107                CNTL EQU    /0107                                       80200450
0115                F000 EQU    /0115                                       80200460
                    ********************************************            80200470
                    *                                                       80200480
                    *           TEST OF RTE OPERATION                       80200490
                    *                                                       80200500
                    ********************************************            80200510
0157 0  CC25        A3C0 LO     N3C1                                        80200520
0158 0  1800             RTE    16                                          80200530
0159 0  C022             LO     N3C0                                        80200540
015A 0  18CF             RTE    15                                          80200550
0158 0  F024             EOR    N3C4                                        80200560
015C 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80200570
015E 0  3086        W3086 OC    /3086       RTE 15-0 TO A FAILED            80200580
015F 0  70F7             MDX    A3C0        LOOP                            80200590
0160 0  1800             RTE    16                                          80200600
0161 0  F01F             EOR    N3C5                                        80200610
0162 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80200620
0164 0  3087        W3087 OC    /3087       RTE 15-A TO Q FAILED            80200630
0165 0  70F1             MDX    A3C0        LOOP                            80200640
                    ********************************************            80200650
0166 0  C018        A3C4 LO     N3C3                                        80200660
0167 0  1800             RTE    16                                          80200670
0168 0  C015             LO     N3C2                                        80200680
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0169 0  18C0             RTE    0                                           80200690
016A 0  18C1             RTE    1                                           80200700
016B 0  18C2             RTE    2                                           80200710
016C 0  18C3             RTE    3                                           80200720
0160 0  18C4             RTE    4                                           80200730
016E 0  18C5             RTE    5                                           80200740
016F 0  18C6             RTE    6                                           80200750
0170 0  18CA             RTE    10                                          80200760
0171 0  F010             EOR    N3C6                                        80200770
0172 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80200780
0174 0  3088        W3088 OC    /3088       SERIES RTE FAILED               80200790
0175 0  70F0             MDX    A3C4        LOOP                            80200800
0176 0  1800             RTE    16                                          80200810
0177 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80200820
0179 0  3089        W3089 OC    /3089       SERIES RTE FAILED               80200830
017A 0  70E8             MDX    A3C4        LOOP                            80200840
                    *                                                       80200850
017B 0  7007             MDX    A400        EXIT                            80200860
                    ********************************************            80200870
017C 0  5555        N3C0 OC     /5555       CONSTANT                        80200880
017D 0  AAAA        N3C1 OC     /AAAA       CONSTANT                        80200890
017E 0  0000        N3C2 OC     /0000       CONSTANT                        80200900
017F 0  8000        N3C3 OC     /8000       CONSTANT                        80200910
0180 0  5554        N3C4 DC     /5554       CONSTANT                        80200920
0181 0  AAA8        N3C5 OC     /AAA8       CONSTANT                        80200930
0182 0  0001        N3C6 OC     /0001       CONSTANT                        80200940
                    ********************************************            80200950
                    *                                                       80200960
                    *           TEST OF SLA OPERATION                       80200970
                    *                                                       80200980
                    ********************************************            80200990
0183 00 C400015F    A400 LO   L N400                                        80201000
0185 0  1800             RTE    16                                          80201010
0186 00 C400010F         LO   L N400                                        80201020
0188 0  1010             SLA    16                                          80201030
0189 00 4C02018C         BSC  L G404,C                                      80201040
018B 0  C0E8             LO     W3088                                       80201050
018C 00 44000115    G404 BSI  L F000        CHECK ERR OR LOOP SW            80201060
018E 0  308A        W308A OC    /308A       SLA 16-CARRY FAILED             80201070
018F 0  70F3             MDX    A400        LOOP                            80201080
0190 0  18D0             RTE    16                                          80201090
0191 00 F400010F         EOR  L N400                                        80201100
0193 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80201110
0195 0  3088        W3088 OC    /3088       SLA 16-AFFECTED Q RE            80201120
0196 0  70EC             MDX    A400        LOOP                            80201130
                    ********************************************            80201140
0197 00 C40001E4    A408 LO   L N405                                        80201150
0199 0  1800             RTE    16                                          80201160
019A 0  C045             LO     N401                                        80201170
0198 0  1010             SLA    16                                          80201180
019C 00 4C02019F         BSC  L G40C,C                                      80201190
019E 0  C0EF             LO     W308A                                       80201200
019F 00 44000115    G40C BSI  L F000        CHECK ERR OR LOOP SW            80201210
01A1 0  308C        W308C OC    /308C       SLA 16-CARRY FAILED             80201220
01A2 0  70F4             MDX    A408        LOOP                            80201230
01A3 0  1800             RTE    16                                          80201240
01A4 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW            80201250
01A6 0  3080        W3080 OC    /3080       SLA 16-AFFECTED Q REG           80201260
01A7 0  70EF             MDX    A408        LOOP                            80201270
                    ********************************************            80201280
01A8 0  C038        8400 LO     N405                                        80201290
01A9 0  18D0             RTE    16                                          80201300
01AA 0  C037             LO     N403                                        80201310
01A8 0  1001             SLA    1                                           80201320
01AC 00 4C0201AF         BSC  L H402,C                                      80201330
01AE 0  7001             MDX    H400                                        80201340
01AF 0  F033        H402 EOR    N404                                        80201350
01B0 00 44000115    H400 BSI  L F000        CHECK ERR OR LOOP SW            80201360
```

OIMAL HEADER TEST (CARD)
TEST3

```
01B2 0 308E        W308E OC      /308E       SLA 1-CARRY FAILED      80201370
0183 0 70F4              MDX     B400        LOOP                    80201380
01B4 0 18D0              RTE     16                                  80201390
0185 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80201400
01B7 0 308F        W308F OC      /308F       SRA 1-AFFECTED Q REG    80201410
01B8 0 70EF              MDX     B400        LOOP                    80201420
                   ********************************************     80201430
01B9 0 C02A        B406  LD      N405                                80201440
01BA 0 18D0              RTE     16                                  80201450
01BB 0 C025              LD      N402                                80201460
01BC 0 1001              SLA     1                                   80201470
01BD 00 4C0201C0         BSC  L  H407,C                              80201480
01BF 0 F022              EOR     N403                                80201490
01C0 00 44000115   H407  BSI  L  F000        CHECK ERR OR LOOP SW    80201500
01C2 0 3090        W3090 OC      /3090       SLA 1-CARRY FAILED      80201510
01C3 0 70F5              MDX     8406        LOOP                    80201520
01C4 0 1800              RTE     16                                  80201530
01C5 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80201540
01C7 0 3091        W3091 OC      /3091       SLA 1-AFFECTED 0 REG    80201550
01C8 0 70F0              MDX     B406        LOOP                    80201560
                   ********************************************     80201570
01C9 0 C01A        840A  LD      N405                                80201580
01CA 0 1800              RTE     16                                  80201590
01CB 0 C014              LD      N401                                80201600
01CC 0 1000              SLA     0                                   80201610
01CD 0 1001              SLA     1                                   80201620
01CE 0 1002              SLA     2                                   80201630
01CF 0 1004              SLA     4                                   80201640
01D0 0 1006              SLA     6                                   80201650
01D1 0 1003              SLA     3                                   80201660
01D2 00 4C020105         BSC  L  H400,C                              80201670
01D4 0 C0ED              LD      W3090                               80201680
0105 00 44000115   H40D  BSI  L  F000        CHECK ERR OR LOOP SW    80201690
01D7 0 3092        W3092 OC      /3092       COMB SLA-CARRY FAILED   80201700
01D8 0 70F0              MDX     B40A        LOOP                    80201710
01D9 0 1800              RTE     16                                  80201720
01DA 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80201730
01DC 0 3093        W3093 OC      /3093       COMB SLA-AFFECTED Q     80201740
01DD 0 70E8              MDX     840A        LOOP                    80201750
                   *                                                80201760
01DE 0 7006              MDX     A440        EXIT                    80201770
                   ********************************************     80201780
01DF 0 FFFF        N400  OC      /FFFF       CONSTANT                80201790
01E0 0 0001        N401  OC      /0001       CONSTANT                80201800
01E1 0 5555        N402  OC      /5555       CONSTANT                80201810
01E2 0 AAAA        N403  OC      /AAAA       CONSTANT                80201820
01E3 0 5554        N404  OC      /5554       CONSTANT                80201830
01E4 0 0000        N405  OC      /0000       CONSTANT                80201840
                   ********************************************     80201850
                   *                                                80201860
                   *          TEST OF SLT OPERATION                 80201870
                   *                                                80201880
                   ********************************************     80201890
01E5 0 C046        A440  LD      N440                                80201900
01E6 0 18D0              RTE     16                                  80201910
01E7 0 C045              LD      N441                                80201920
01E8 0 10A0              SLT     32                                  80201930
01E9 00 4C0201EC         BSC  L  G442,C                              80201940
01EB 0 C0EB              LD      W3092                               80201950
01EC 00 44000115   G442  BSI  L  F000        CHECK ERR OR LOOP SW    80201960
01EE 0 3094        W3094 OC      /3094       SLT 32-CARRY FAILED     80201970
01EF 0 70F5              MDX     A440        LOOP                    80201980
01F0 0 1800              RTE     16                                  80201990
01F1 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80202000
01F3 0 3095        W3095 OC      /3095       SLT 32-0 REG FAILED     80202010
01F4 0 70F0              MDX     A440        LOOP                    80202020
                   ********************************************     80202030
01F5 0 C038        A444  LD      N442                                80202040
```

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OIMAL HEADER TEST (CARD)
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```
01F6 0 1800              RTE     16                                  80202050
01F7 0 C035              LD      N441                                80202060
01F8 0 1090              SLT     16                                  80202070
01F9 00 4C0201FC         BSC  L  G446,C                              80202080
01F8 0 F032              EOR     N442                                80202090
01FC 00 44000115   G446  BSI  L  F000        CHECK ERR OR LOOP SW    80202100
01FE 0 3096        W3096 OC      /3096       SLT 16-CARRY FAILED     80202110
01FF 0 70F5              MDX     A444        LOOP                    80202120
0200 0 1800              RTE     16                                  80202130
0201 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80202140
0203 0 3097        W3097 OC      /3097       SLT 16-0 REG FAILED     80202150
0204 0 70F0              MDX     A444        LOOP                    80202160
                   ********************************************     80202170
0205 0 C029        A44A  LD      N443                                80202180
0206 0 18D0              RTE     16                                  80202190
0207 0 C025              LD      N441                                80202200
0208 0 108F              SLT     15                                  80202210
0209 00 4C02020C         BSC  L  G44C,C                              80202220
020B 0 F024              EOR     N444                                80202230
020C 00 44000115   G44C  BSI  L  F000        CHECK ERR OR LOOP SW    80202240
W3098 OC      /3098       SLT 15-CARRY FAILED                        80202250
020E 0 3098              MDX     A44A        LOOP                    80202260
020F 0 70F5              RTE     16                                  80202270
0210 0 1800              EOR     N445                                80202280
0211 0 F01F              BSI  L  F000        CHECK ERR OR LOOP SW    80202290
0212 00 44000115   W3099 OC      /3099       SLT 15-0 REG FAILED     80202300
0214 0 3099              MDX     A44A        LOOP                    80202310
0215 0 70EF        ********************************************     80202320
0216 0 C015        B440  LD      N440                                80202330
0217 0 18D0              RTE     16                                  80202340
0218 0 C014              LD      N441                                80202350
0219 0 1080              SLT     0                                   80202360
021A 0 1081              SLT     1                                   80202370
0218 0 1085              SLT     5                                   80202380
021C 0 1087              SLT     7                                   80202390
0210 0 1089              SLT     9                                   80202400
021E 0 108A              SLT     10                                  80202410
021F 00 4C020222         BSC  L  H443,C                              80202420
0221 0 C0EC              LD      W3098                               80202430
0222 00 44000115   H443  BSI  L  F000        CHECK ERR OR LOOP SW    80202440
0224 0 309A        W309A OC      /309A       COMB SLT-CARRY FAILED   80202450
0225 0 70F0              MDX     8440        LOOP                    80202460
0226 0 1800              RTE     16                                  80202470
0227 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80202480
0229 0 309B        W309B OC      /309B       COMB SLT-0 REG FAILE    80202490
022A 0 70E8              MDX     B440        LOOP                    80202500
                   *                                                80202510
0228 0 7006              MDX     A480        EXIT                    80202520
                   ********************************************     80202530
022C 0 0001        N440  OC      /0001       CONSTANT                80202540
0220 0 0000        N441  OC      /0000       CONSTANT                80202550
022E 0 FFFF        N442  OC      /FFFF       CONSTANT                80202560
022F 0 5555        N443  OC      /5555       CONSTANT                80202570
0230 0 2AAA        N444  OC      /2AAA       CONSTANT                80202580
0231 0 8000        N445  OC      /8000       CONSTANT                80202590
                   ********************************************     80202600
                   *                                                80202610
                   *          TEST OF STO OPERATION                 80202620
                   *                                                80202630
                   ********************************************     80202640
0232 0 C011        A480  LD      N480                                80202650
0233 0 0012              STO     N482                                80202660
0234 0 C010              LD      N481                                80202670
0235 0 C010              LD      N482                                80202680
0236 00 44000115         BSI  L  F000        CHECK ERR OR LOOP SW    80202690
0238 0 309C        W309C OC      /309C       STORE ZEROS FAILED      80202700
0239 0 70F8              MDX     A480        LOOP                    80202710
                   ********************************************     80202720
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023A 0  C00A        A482  LO      N481
0238 0  000A              STO     N482
023C 0  C007              LO      N480
023D 0  C008              LO      N482
023E 0  F006              EOR     N481
023F 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0241 0  3090        W309D OC      /3090     STO ONES FAILED
0242 0  70F7              MDX     A482      LOOP
                    *
0243 0  7003              MDX     A4C0      EXIT
                    ********************************************
0244 0  0000        N480  DC      /0000     CONSTANT
0245 0  FFFF        N481  DC      /FFFF     CONSTANT
0246 0  FFFF        N482  DC      /FFFF     STORAGE
                    ********************************************
                    *
                    *                TEST OF STS OPERATION
                    *
                    ********************************************
0247 0  2000        A4C0  LDS     0
0248 0  2841              STS     N4C0
0249 0  C040              LD      N4C0
024A 00 4400011F          BSI  L  F000      CHECK ERR OR LOOP SW
024C 0  309E        W309E OC      /309E     STS FAILED TO STORE
024D 0  70F9              MDX     A4C0      LOOP
                    ********************************************
024E 0  C0FF        A4C2  LD      A4C2
024F 0  2003              LDS     3
0250 0  2839              STS     N4C0
0251 0  F0FC              EOR     A4C2
0252 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0254 0  309F        W309F OC      /309F     ACC GONE AFT LDS-STS
0255 0  70F1              MDX     A4C0
0256 00 4C020259          BSC  L  H4C2,C
0258 0  7001              MDX     G4C2
0259 0  C0F4        H4C2  LD      A4C2
025A 00 44000115    G4C2  BSI  L  F000      CHECK ERR OR LOOP SW
025C 0  30A0        W30A0 OC      /30A0     STS NOT CLEAR CARRY
025D 0  70F0              MDX     A4C2      LOOP
025E 00 4C010261          BSC  L  H4C4,O
0260 0  7001              MDX     G4C4
0261 0  C0EC        H4C4  LD      A4C2
0262 00 44000115    G4C4  BSI  L  F000      CHECK ERR OR LOOP SW
0264 0  30A1        W30A1 OC      /30A1     STS NOT CLEAR OVERFLW
0265 0  70EB              MDX     A4C2      LOOP
0266 0  C023              LD      N4C0
0267 0  F023              EOR     N4C1
0268 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
026A 0  30A2        W30A2 OC      /30A2     STS FAILED TO STORE
026B 0  70E2              MDX     A4C2      LOOP
                    ********************************************
026C 0  2002        A4C8  LDS     2
026D 0  28.C              STS     N4C0
026E 0  28.0              STS     N4C2
026F 0  C0.A              LD      N4C0
0270 0  F0.C              EOR     N4C3
0271 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0273 0  30A3        W30A3 OC      /30A3     STS FAILED TO STORE
0274 0  70F7              MDX     A4C8      LOOP
0275 0  C0.6              LD      N4C2
0276 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0278 0  30A4        W30A4 OC      /30A4     STS NOT CLEAR CARRY
0279 0  70F2              MDX     A4C8      LOOP
                    ********************************************
027A 0  2001        A4CC  LDS     1
027B 0  280F              STS     N4C0
027C 0  280F              STS     N4C2
027D 0  C00C              LD      N4C0
```



```
027E 0  F00F              EOR     N4C4
027F 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0281 0  30A5        W30A5 OC      /30A5     STS FAILED TO STORE
0282 0  70F7              MDX     A4CC      LOOP
0283 0  C008              LD      N4C2
0284 00 44000115          BSI  L  F000      CHECK ERR OR LOOP SW
0286 0  30A6        W30A6 OC      /30A6     STS NOT CLEAR OVERFL
0287 0  70F2              MDX     A4CC      LOOP
                    ********************************************
0288 00 4C000107          BSC  L  CNTL      RETURN TO READ NEXT SEC
                    ********************************************
028A 0  0003        N4C0  DC      /0003     STORAGE
0288 0  0003        N4C1  DC      /0003     CONSTANT
028C 0  0000        N4C2  DC      /0000     CONSTANT
028D 0  0002        N4C3  DC      /0002     CONSTANT
028E 0  0001        N4C4  DC      /C001     CONSTANT
                    ********************************************
0290    0139              END   X  *-P10    END CARD NOT USED  8020357
```

DIMAL HEADER TEST (CARO)
TEST3

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A3C0	0157	015F,0165
A3C4	0166	0175,017A
A4CC	027A	0282,0287
A4C0	0247	0243,0240,0255
A4C2	024E	024E,0251,0259,025D,0261,0265,0268
A4C8	026C	0274,0279
A400	0183	017B,018F,0196
A408	0197	01A2,01A7
A44A	0205	020F,0215
A440	01E5	010E,01FF,01F4
A444	01F5	01FF,0204
A480	0232	0226,0239
A482	023A	0242
B40A	01C9	01D8,0100
B400	01A8	0183,0188
B406	0189	01C3,01C8
B440	0216	0225,022A
CNTL	0107	0288
F000	0115	015C,0162,0172,0177,018C,0193,019F,01A4,0180,0185, 01C0,01C5,01D5,01DA,01EC,01F1,01FC,0201,020C,0212, 0222,0227,0236,023F,024A,0252,025A,0262,0268,0271, 0276,027F,0284
G4C2	025A	0258
G4C4	0262	0260
G40C	019F	019C
G404	018C	0189
G44C	020C	0203
G442	01EC	01E9
G446	01FC	01F9
H4C2	0259	0256
H4C4	0261	025E
H400	01D5	01D2
H400	01B0	01AE
H402	01AF	01AC
H407	01C0	01B0
H443	0222	021F
N3C0	017C	0159
N3C1	0170	0157
N3C2	017E	0168
N3C3	017F	0166
N3C4	0180	0158
N3C5	0181	0161
N3C6	0182	0171
N4C0	028A	0248,0249,0250,0266,0260,026F,0278,0270
N4C1	0288	0267
N4C2	028C	026E,0275,027C,0283
N4C3	0280	0270
N4C4	028E	027E
N400	010F	0183,0186,0191
N401	01E0	019A,01CB
N402	01E1	01BB
N403	01E2	01AA,018F
N404	01E3	01AF
N405	01F4	0197,01A8,0189,01C9
N440	022C	01E5,0216
N441	0220	01E7,01F7,0207,0218
N442	022E	01F5,01F8
N443	022F	0205
N444	0230	0208
N445	0231	0211
N480	0244	0232,023C
N481	0245	0234,023A,023E
N482	0246	0233,0235,0238,023D
P10	0156	028F
W30A0	025C	30A0

DIMAL HEADER TEST (CARO)
TEST3

W30A1	0264	30A1
W30A2	026A	30A2
W30A3	0273	30A3
W30A4	0278	30A4
W30A5	0281	30A5
W30A6	0286	30A6
W308A	018E	308A,019E
W308B	0195	308B
W308C	01A1	308C
W3080	01A6	308D
W308E	0182	308E
W308F	01B7	308F
W3086	015E	3086
W3087	0164	3087
W3088	0174	3088,0188
W3089	0179	3089
W309A	0224	309A
W3098	0229	3098
W309C	0238	309C
W3090	0241	3090
W309E	024C	309E
W309F	0254	309F
W3090	01C2	3090,01D4
W3091	01C7	3091
W3092	0107	3C92,01EB
W3093	010C	3093
W3094	01EE	3094
W3095	01F3	3095
W3096	01FE	3096
W3097	0203	3097
W3098	020E	3098,0221
W3099	0214	3099

DIMAL HEADER TEST (CARD)
TEST4

```
                        ABS
02BC                    DRG     /30A7                                   80200020
                    ********************************************        80200030
                    *           WAITS       ERROR COMMENTS       *      80200040
                    ********************************************        80200050
30A7 0  015E            DC      W30A7+1     8SC SKPD-SHOULD NOT         80200060
30A8 0  0167            DC      W30A8+1     8SC SKPD-SHDULD NOT         80200070
30A9 0  0171            DC      W30A9+1     8SC FAILED TO SKIP          80200080
30AA 0  0179            DC      W30AA+1     8SC NOT CLEAR DVERFLW       80200090
30AB 0  0182            DC      W30A8+1     8SC FAILED TO SKIP          80200100
30AC 0  018C            OC      W30AC+1     8SC FELL THRU               80200110
30AD 0  0190            DC      W30AD+1     8SC SKPD-SHOULD BRNCH       80200120
30AE 0  0195            DC      W30AE+1     ACC DISTROYED AFTER         80200130
30AF 0  019F            DC      W30AF+1     8SC FELL THRU               80200140
30B0 0  01A3            DC      W30B0+1     8SC SKPD-SHDULD BRNC        80200150
30B1 0  01AC            OC      W30B1+1     8SC SKPO-SHOULDNT           80200160
30B2 0  01B1            DC      W30B2+1     BSC BRNCHED-SHOULONT        80200170
30B3 0  01BC            DC      W30B3+1     8SC + CLEARED OVFLW         80200180
30B4 0  01C1            DC      W30B4+1     8SC FAILED TO SKP           80200190
30B5 0  01D2            DC      W30B5+1     8SI FELL THRU               80200200
30B6 0  01D7            DC      W30B6+1     8SI SKPO-SHOULD BRNC        80200210
30B7 0  01E0            DC      W30B7+1     8SI DID NOT CLEAR DFL       80200220
30B8 0  01E9            DC      W30B8+1     8SI FELL THRDUGH            80200230
30B9 0  01ED            DC      W30B9+1     8SI SKPD-SHOULD BRNC        80200240
30BA 0  01F9            DC      W30BA+1     8SI BRNCHO-SHDULDNT         80200250
30BB 0  0204            OC      W30B8+1     8SI BRNCHD-SHDULDNT         80200260
30BC 0  020F            OC      W30BC+1     8SI BRNCHO-SHDULDNT         80200270
30BD 0  021A            DC      W30B0+1     8SI BRNCHO-SHOULONT         80200280
30BE 0  0225            DC      W30BE+1     8SI BRNCHD-SHOULONT         80200290
30BF 0  0230            DC      W30BF+1     8SI BRNCHO-SHOULONT         80200300
30C0 0  023D            DC      W30C0+1     TAG REG BIT 7 FAILED        80200310
30C1 0  0245            DC      W30C1+1     TAG REG BIT 6 FAILED        80200320
30C2 0  0240            DC      W30C2+1     TAG BIT 6 OR 7 FAILED       80200330
30C3 0  0256            DC      W30C3+1     IX 1 NOT LOADED             80200340
30C4 0  025F            DC      W30C4+1     IX 2 NOT LOADED             80200350
30C5 0  0268            DC      W30C5+1     IX 3 NOT LOADED             80200360
30C6 0  0271            OC      W30C6+1     IX 1 NOT LOADED             80200370
30C7 0  027A            DC      W30C7+1     IX 2 NOT LOADED             80200380
30C8 0  0283            DC      W30C8+1     IX 3 NOT LOADED             80200390
                    ********************************************        80200400
30C9                    ORG     342                                     80200410
                    *                                                   80200420
0156 0  0200        PID DC      /0200       PID                         80200430
                    *                                                   80200440
0107                CNTL EQU    /0107                                   80200450
0115                F000 EQU    /0115                                   80200460
                    ********************************************        80200470
                    *                                                   80200480
                    *                TEST OF 8SC OPERATION              80200490
                    *                                                   80200500
                    ********************************************        80200510
0157 0  2003        A500 LDS    3                                       80200520
0158 0  C06A             LD     N500                                    80200530
0159 0  482F             8SC    D+EZC                                   80200540
015A 0  F068             EDR    N500                                    80200550
0158 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200560
015D 0  30A7        W30A7 OC    /30A7       8SC SKPD-SHDULD NOT         80200570
015E 0  70F8             MDX    A500        LOOP                        80200580
                    ********************************************        80200590
015F 0  2003        A502 LDS    3                                       80200600
0160 0  C063             LD     N501                                    80200610
0161 0  481B             8SC    -DC+                                    80200620
0162 0  7001             MDX    G502                                    80200630
0163 0  C000             LD     G502                                    80200640
0164 00 44000115    G502 8SI  L F000        CHECK ERR DR LDCP SW        80200650
0166 0  30A8        W30A8 DC    /30A8       BSC SKPD-SHDULD NOT         80200660
0167 0  70F7             MDX    A502        LDOP                        80200670
                    ********************************************        80200680
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DIMAL HEADER TEST (CARD)
TEST4

```
0168 0  2003        A504 LDS    3                                       80200690
0169 0  C05B             LD     N502                                    80200700
016A 0  2807             STS    N507                                    80200710
0168 0  4815             8SC    O-E                                     80200720
016C 0  7001             MDX    G504                                    80200730
0160 0  F057             EOR    N502                                    80200740
016E 00 44000115    G504 8SI  L F000        CHECK ERR OR LOOP SW        80200750
0170 0  30A9        W30A9 OC    /30A9       BSC FAILED TO SKIP          80200760
0171 0  70F6             MDX    A504        LOOP                        80200770
0172 0  2000        N507 LDS    0           STATUS STORED HERE          80200780
0173 0  4801             8SC    D           TURN OFF DVERFLD            80200790
0174 0  4801             BSC    D                                       80200800
0175 0  C04F             LD     N502                                    80200810
0176 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200820
0178 0  30AA        W30AA DC    /30AA       8SC NOT CLEAR DVERFLW       80200830
0179 0  70EE             MDX    A504        LOOP                        80200840
                    ********************************************        80200850
017A 0  2000        A508 LDS    0                                       80200860
0178 0  C047             LD     N500                                    80200870
017C 0  482A             8SC    C+Z                                     80200880
017D 0  7001             MDX    G508                                    80200890
017E 0  F044             EOR    N500                                    80200900
017F 00 44000115    G508 8SI  L F000        CHECK ERR OR LOOP SW        80200910
0181 0  30A8        W30AB DC    /30A8       BSC FAILED TO SKIP          80200920
0182 0  70F7             MDX    A503        LOOP                        80200930
                    ********************************************        80200940
0183 0  2003        A50A LDS    3                                       80200950
0184 0  C03F             LD     N500                                    80200960
0185 00 4C0F0191         8SC  L G50A,+DCE                               80200970
0187 0  7001             MDX    H50A                                    80200980
0188 0  7004             MDX    J50A                                    80200990
0189 00 44000115    H50A 8SI  L F000        CHECK ERR OR LOOP SW        80201000
018B 0  30AC        W30AC DC    /30AC       BSC FELL THRU               80201010
018C 0  70F6             MDX    A50A        LOOP                        80201020
0180 00 44000115    J50A 8SI  L F000        CHECK ERR OR LOOP SW        80201030
018F 0  30A0        W30AD OC    /30AD       8SC SKPD-SHOULD BRNCH       80201040
0190 0  70F2             MDX    A50A        LOOP                        80201050
0191 0  F031        G50A EOR    N500                                    80201060
0192 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80201070
0194 0  30AE        W30AE DC    /30AE       ACC DISTROYED AFTER         80201080
0195 0  70ED             MDX    A50A                                    80201090
                    ********************************************        80201100
0196 0  2003        A50C LDS    3                                       80201110
0197 0  CG2E             LD     N504                                    80201120
0198 00 4C3001A4         8SC  L A50E,-Z                                 80201130
019A 0  7001             MDX    H50C                                    80201140
0198 0  7004             MDX    J50C                                    80201150
019C 00 44000115    H50C 8SI  L F000        CHECK ERR OR LOOP SW        80201160
019E 0  30AF        W30AF DC    /30AF       8SC FELL THRU               80201170
019F 0  70F6             MDX    A50C        LOOP                        80201180
01A0 00 44000115    J50C 8SI  L F000        CHECK ERR OR LOOP SW        80201190
01A2 0  3080        W3080 DC    /3080       BSC SKPD-SHOULD BRNC        80201200
01A3 0  70F2             MDX    A50C        LOOP                        80201210
                    ********************************************        80201220
01A4 0  2003        A50E LDS    3                                       80201230
01A5 0  C01D             LD     N500                                    80201240
01A6 00 4C3F01AE         8SC  L G50E,+EOCZ-                             80201250
01A8 0  F01A             EDR    N500                                    80201260
01A9 00 44000115         8SI  L F000        CHECK ERR OR LOOP SW        80201270
01AB 0  3081        W3081 DC    /3081       8SC SKPD-SHOULONT           80201280
01AC 0  70F7             MDX    A50F        LOOP                        80201290
01AD 0  7004             MDX    B500                                    30201300
01AE 00 44000115    G50E 8SI  L F000        CHECK ERR OR LOOP SW        80201310
                    ********************************************        80201320
0180 0  3082        W3082 DC    /3082       BSC BRNCHED-SHOULONT        80201330
0181 0  70F2             MDX    A50E        LOOP                        80201340
0182 0  2003        B500 LDS    3                                       80201350
01B3 0  C012             LD     N504                                    80201360
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01B4 0  4808            BSC     +                                       80201370
01B5 0  7008            MDX     S501                                    80201380
01B6 0  2B10            STS     N505                                    80201390
01B7 0  C00F            LD      N505                                    80201400
01B8 0  F00F            EDR     N506                                    80201410
01B9 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201420
01BB 0  30B3    W30B3   OC      /30B3   BSC + CLEARED OVFLW             80201430
01BC 0  70F5            MDX     B500    LOOP                            80201440
01BD 0  7003            MDX     A540                                    80201450
01BE 00 44000115    S501  BSI  L  F000    CHECK ERR OR LOOP SW            80201460
01C0 0  30B4    W30B4   OC      /30B4   BSC FAILED TO SKP               80201470
01C1 0  70F0            MDX     B500    LOOP                            80201480
                        *                                               80201490
01C2 0  7006            MDX     A540    EXIT                            80201500
                        ************************************************80201510
01C3 0  B001    N500    OC      /B001   CONSTANT                        80201520
01C4 0  0000    N501    OC      /0000   CONSTANT                        80201530
01C5 0  B000    N502    OC      /B000   CONSTANT                        80201540
01C6 0  0004    N504    OC      /0004   CONSTANT                        80201550
01C7 0  0000    N505    DC      /0000   STORAGE                         80201560
01C8 0  0003    N506    DC      /0003   CONSTANT                        80201570
                        ************************************************80201580
                        *                                               80201590
                        *           TEST OF BSI OPERATION               80201600
                        *                                               80201610
                        ************************************************80201620
01C9 0  2003    A540    LDS     3                                       80201630
01CA 0  C067            LD      N540                                    80201640
01CB 00 442F0109        BSI  L  G540+ECO+Z                              80201650
01CD 0  7001            MDX     H540                                    80201660
01CE 0  7005            MDX     J540                                    80201670
01CF 00 44000115    H540  BSI  L  F000    CHECK ERR OR LOOP SW          80201680
0101 0  3085    W3085   OC      /3085   BSI FELL THRU                   80201690
0102 0  70F6            MDX     A540    LOOP                            80201700
0103 0  700D            MDX     A544                                    80201710
0104 00 44000115    J540  BSI  L  F000    CHECK ERR OR LOOP SW          80201720
0106 0  3086    W3086   DC      /3086   BSI SKPD-SHOULD BRNCHO          80201730
0107 0  70F1            MDX     A540    LOOP                            80201740
0108 0  7008            MDX     A544                                    80201750
0109 0  0000    G540    OC      /0000                                   80201760
010A 0  2858            STS     N541                                    80201770
010B 0  C057            LD      N541                                    80201780
010C 0  F057            EDR     N542                                    80201790
010D 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201800
010F 0  3087    W3087   OC      /3057   BSI DID NOT CLEAR OFL           80201810
01E0 0  70EB            MDX     A540    LOOP                            80201820
                        ************************************************80201830
01E1 0  C052    A544    LD      N542                                    80201840
01E2 00 443001EF        BSI  L  G544+Z-                                 80201850
01E4 0  7001            MDX     H544                                    80201860
01E5 0  7004            MDX     J544                                    80201870
01E6 00 44000115    H544  BSI  L  F000    CHECK ERR OR LOOP SW          80201880
01E8 0  3088    W3088   DC      /3088   BSI FELL THROUGH                80201890
01E9 0  70F7            MDX     A544    LOOP                            80201900
01EA 00 44000115    J544  BSI  L  F000    CHECK ERR OR LOOP SW          80201910
01EC 0  30B9    W30B9   OC      /30B9   BSI SKPD-SHOULD BRNC            80201920
01EO 0  70F3            MDX     A544    LOOP                            80201930
01EE 0  7001            MDX     A546                                    80201940
01EF 0  0000    G544    OC      /0000                                   80201950
                        ************************************************80201960
01F0 0  C044    A546    LO      N543                                    80201970
01F1 00 442001F4        BSI  L  G546+2                                  80201980
01F3 0  7002            MDX     J546                                    80201990
01F4 0  0000    G546    DC      /0000                                   80202000
01F5 0  C0FE            LD      G546                                    80202010
01F6 00 44000115    J546  BSI  L  F000    CHECK ERR OR LOOP SW          80202020
01F8 0  308A    W308A   DC      /308A   BSI BRNCHO-SHOULDNT            80202030
01F9 0  70F6            MDX     A546    LOOP                            80202040
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                        ************************************************80202050
01FA 0  C037    A54B    LO      N540                                    80202060
01FB 00 441001FF        BSI  L  G54B+-                                  80202070
01FD 0  1010            SLA     16                                      80202080
01FE 0  7002            MDX     H54B                                    80202090
01FF 0  0000    G54B    DC      /0000                                   80202100
0200 0  C0FE            LD      G54B                                    80202110
0201 00 44000115    H54B  BSI  L  F000    CHECK ERR OR LOOP SW          80202120
0203 0  308B    W30BB   DC      /308B   BSI BRNCHO-SHOULDNT             80202130
0204 0  70F5            MDX     A54B    LOOP                            80202140
                        ************************************************80202150
0205 0  C02E    A54A    LO      N542                                    80202160
0206 00 440B020A        BSI  L  G54A+*                                  80202170
0208 0  1010            SLA     16                                      80202180
0209 0  7002            MDX     H54A                                    80202190
020A 0  0000    G54A    OC      /0000                                   80202200
0208 0  C0FE            LD      G54A                                    80202210
020C 00 44000115    H54A  BSI  L  F000    CHECK ERR OR LOOP SW          80202220
020E 0  308C    W30BC   DC      /308C   BSI BRNCHO-SHOULDNT            80202230
020F 0  70F5            MDX     A54A    LOOP                            80202240
                        ************************************************80202250
0210 0  C023    A54C    LD      N542                                    80202260
0211 00 44040215        BSI  L  G54C+E                                  80202270
0213 0  1010            SLA     16                                      80202280
0214 0  7002            MDX     H54C                                    80202290
0215 0  0000    G54C    OC      /0000                                   80202300
0216 0  C0FE            LD      G54C                                    80202310
0217 00 44000115    H54C  BSI  L  F000    CHECK ERR OR LOOP SW          80202320
0219 0  30BD    W30BD   DC      /30BD   BSI BRNCHO-SHOULDNT             80202330
021A 0  70F5            MOX     A54C    LOOP                            80202340
                        ************************************************80202350
021B 0  2000    A54E    LDS     0                                       80202360
021C 0  1010            SLA     16                                      80202370
021D 00 44020220        BSI  L  G54E+C                                  80202380
021F 0  7002            MOX     H54E                                    80202390
0220 0  0000    G54E    DC      /0000                                   80202400
0221 0  C0FE            LD      G54E                                    80202410
0222 00 44000115    H54E  BSI  L  F000    CHECK ERR OR LOOP SW          80202420
0224 0  308E    W30BE   OC      /30BE   BSI BRNCHO-SHOULDNT             80202430
0225 0  70F5            MOX     A54E    LOOP                            80202440
                        ************************************************80202450
0226 0  2000    A54F    LDS     0                                       80202460
0227 0  1010            SLA     16                                      80202470
0228 00 44010228        BSI  L  G54F+0                                  80202480
022A 0  7002            MDX     H54F                                    80202490
022B 0  0000    G54F    OC      /0000                                   80202500
022C 0  C0FE            LD      G54F                                    80202510
022D 00 44000115    H54F  BSI  L  F000    CHECK ERR OR LOOP SW          80202520
022F 0  308F    W30BF   OC      /308F   BSI BRNCHO-SHOULDNT             80202530
0230 0  70F5            MDX     A54F    LOOP                            80202540
                        *                                               80202550
0231 0  7004            MDX     A600    EXIT                            80202560
                        ************************************************80202570
0232 0  8001    N540    DC      /8001   CONSTANT                        80202580
0233 0  0000    N541    DC      /0000   STORAGE                         80202590
0234 0  0002    N542    OC      /0002   CONSTANT                        80202600
0235 0  0000    N543    DC      /0000   CONSTANT                        80202610
                        ************************************************80202620
                        *                                               80202630
                        *           TEST OF LDX OPERATION               80202640
                        *                                               80202650
                        ************************************************80202660
0236 0  C0FF    A600    LD      A600                                    80202670
0237 00 6500023A        LDX  L1 G600                                    80202680
0239 0  1010            SLA     16                                      80202690
023A 00 44000115    G600  BSI  L  F000    CHECK ERR OR LOOP SW          80202700
023C 0  30C0    W30C0   DC      /30C0   TAG REG BIT 7 FAILED            80202710
023D 0  70FB            MOX     A600    LOOP                            80202720
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                        ********************************************** 80202730
023E 0  COFF    A602    LD      A602                                   80202740
023F 00 66000242        LDX   L2 G602                                   80202750
0241 0  1010            SLA     16                                     80202760
0242 00 44000115  G602  BSI   L  F000       CHECK ERR OR LOOP SW       80202770
0244 0  30C1      W30C1 DC      /30C1       TAG REG BIT 6 FAILED       80202780
0245 0  70F8            MDX     A602        LOOP                       80202790
                        ********************************************** 80202800
0246 0  COFF    A603    LD      A603                                   80202810
0247 00 6700024A        LDX   L3 G603                                   80202820
0249 0  1010            SLA     16                                     80202830
024A 00 44000115  G603  BSI   L  F000       CHECK ERR OR LOOP SW       80202840
024C 0  30C2      W30C2 DC      /30C2       TAG BIT 6 OR 7 FAILED      80202850
024D 0  70F8            MDX     A603        LOOP                       80202860
                        ********************************************** 80202870
024E 0  6100    A604    LDX     1 0                                    80202880
024F 0  C038            LD      N603                                   80202890
0250 00 C5000287        LD    L1 N601                                   80202900
0252 0  F034            EOR     N601                                   80202910
0253 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80202920
0255 0  30C3      W30C3 DC      /30C3       IX 1 NOT LOADED            80202930
0256 0  70F7            MDX     A604        LOOP                       80202940
                        ********************************************** 80202950
0257 0  6200    A606    LDX     2 0                                    80202960
0258 0  C02F            LD      N603                                   80202970
0259 00 C6000287        LD    L2 N601                                   80202980
025B 0  F02B            EOR     N601                                   80202990
025C 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80203000
025F 0  30C4      W30C4 DC      /30C4       IX 2 NOT LOADED            80203010
025F 0  70F7            MDX     A606        LOOP                       80203020
0260 0  6300    A608    LDX     3 0                                    80203030
0261 0  C026            LD      N603                                   80203040
0262 00 C7000287        LD    L3 N601                                   80203050
0264 0  F022            EOR     N601                                   80203060
0265 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80203070
0267 0  30C5      W30C5 DC      /30C5       IX 3 NOT LOADED            80203080
0268 0  70F7            MDX     A608        LOOP                       80203090
                        ********************************************** 80203100
0269 0  61FF    A60A    LDX     1 -1                                   80203110
026A 0  C01D            LD      N603                                   80203120
026B 00 C5000287        LD    L1 N601                                   80203130
026D 0  F018            EOR     N600                                   80203140
026E 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80203150
0270 0  30C6      W30C6 DC      /30C6       IX 1 NOT LOADED            80203160
0271 0  70F7            MDX     A60A        LOOP                       80203170
                        ********************************************** 80203180
0272 0  62FF    A60C    LDX     2 -1                                   80203190
0273 0  C014            LD      N603                                   80203200
0274 00 C6000287        LD    L2 N601                                   80203210
0276 0  F00F            EOR     N600                                   80203220
0277 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80203230
0279 0  30C7      W30C7 DC      /30C7       IX 2 NOT LOADED            80203240
027A 0  70F7            MDX     A60C        LOOP                       80203250
                        ********************************************** 80203260
027B 0  63FF    A60E    LDX     3 -1                                   80203270
027C 0  C008            LD      N603                                   80203280
027D 00 C7000287        LD    L3 N601                                   80203290
027F 0  F006            EOR     N600                                   80203300
0280 00 44000115        BSI   L  F000       CHECK ERR OR LOOP SW       80203310
0282 0  30C8      W30C8 DC      /30C8       IX 3 NOT LOADED            80203320
0283 0  70F7            MDX     A60E        LOOP                       80203330
                        ********************************************** 80203340
0284 00 4C000107        BSC   L  CNTL       RETURN TO READ NEXT SEC    80203350
                        ********************************************** 80203360
0286 0  0286    N600    DC      N600        CONSTANT                   80203370
0287 0  0287    N601    DC      N601        CONSTANT                   80203380
0288 0  FFFF    N603    DC      /FFFF       CONSTANT                   80203390
                        ********************************************** 80203400
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028A    0133            END   X  *-P10      END CARD NOT USED  8020340 802034I0
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DIMAL HEADER TEST (CARD)
TEST4

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A50A	0183	016C,0190,0195
A50C	0196	019F,01A3
A50E	01A4	0198,01AC,0181
A500	0157	015E
A502	015F	0167
A504	0168	0171,0179
A508	017A	0182
A54A	0205	020F
A54C	0210	021A
A54E	021B	0225
A54F	0226	0230
A540	01C9	01BD,01C2,01D2,0107,01E0
A544	01E1	0103,01D8,01E9,01E0
A546	01F0	01EE,01F9
A548	01FA	0204
A60A	0269	0271
A60C	0272	027A
A60E	027B	0283
A600	0236	0231,0236,023D
A602	023E	023E,0245
A603	0246	0246,024D
A604	024E	0256
A606	0257	025F
A608	0260	0268
B500	0182	01AD,01BC,01C1
CNTL	0107	0284
F000	0115	0158,0164,016E,0176,017F,0189,018D,0192,019C,01A0, 01A9,01AE,01E9,01B2,01CF,01D4,01DD,01E6,01EA,01F6, 0201,020C,0217,0222,022D,023A,0242,024A,0253,025C, 0265,026E,0277,0280
G50A	0191	0185
G50E	01AE	01A6
G502	0164	0162,0163
G504	016E	016C
G508	017F	0170
G54A	020A	0206,0208
G54C	0215	0211,0216
G54E	0220	021D,0221
G54F	0228	0228,022C
G540	0109	01CB
G544	01EF	01E2
G546	01F4	01F1,01F5
G548	01FF	01FB,0200
G600	023A	0237
G602	0242	023F
G603	024A	0247
H50A	0189	0187
H50C	019C	019A
H54A	020C	0209
H54C	0217	0214
H54E	0222	021F
H54F	022D	022A
H540	01CF	01CD
H544	01E6	01E4
H548	0201	01FE
J50A	018D	0188
J50C	01A0	0198
J540	01D4	01CE
J544	01EA	01E5
J546	01F6	01F3
N500	01C3	0138,015A,017B,017E,0184,0191,01A5,0148
N501	01C4	0160
N502	01C5	0169,016D,0175
N504	01C6	0197,0183
N505	01C7	0186,0187

DIMAL HEADER TEST (CARD)
TEST4

N506	01C8	01B8
N507	0172	016A
N540	0232	01CA,01FA
N541	0233	01DA,01D8
N542	0234	010C,01E1,0205,0210
N543	0235	01F0
N600	0286	026D,0276,027F,0286
N601	0287	0250,0252,0259,0258,0262,0264,0268,0274,027D,0287
N603	0288	024F,0258,0261,026A,0273,027C
PID	0156	0289
S501	01BE	0185
W30AA	0178	30AA
W30AB	0181	30AB
W30AC	0188	30AC
W30AD	018F	30AD
W30AE	0194	30AE
W30AF	019E	30AF
W30A7	015D	30A7
W30A8	0166	30A8
W30A9	0170	30A9
W308A	01F8	308A
W30B8	0203	30B8
W308C	020E	308C
W30BD	0219	30BD
W308E	0224	308E
W308F	022F	308F
W30B0	01A2	30B0
W3081	01AB	3081
W30B2	01B0	30B2
W3083	0188	3083
W30B4	01C0	30B4
W30B5	01D1	30B5
W3086	01D6	3086
W30B7	01DF	30B7
W3088	01E8	3088
W3089	01EC	3089
W30C0	023C	30C0
W30C1	0244	30C1
W30C2	024C	30C2
W30C3	0255	30C3
W30C4	025E	30C4
W30C5	0267	30C5
W30C6	0270	30C6
W30C7	0279	30C7
W30C8	0282	30C8

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                        ABS
02BC                    ORG     /30C9                                   80200010
                    ********************************************        80200020
                    *           WAITS       ERRDR COMMENTS       *      80200030
                    ********************************************        80200040
30C9 0  0160            DC      W30C9+1     LONG FORM LOX-FAILED        80200050
30CA 0  016A            DC      W30CA+1     LONG LDX FAILED             80200060
30CB 0  0174            DC      W30CB+1     LONG LDX FAILED             80200070
30CC 0  017E            DC      W30CC+1     INDIRECT LDX FAILED         80200080
30CD 0  0188            DC      W30CD+1     INDIRECT LDX FAILED         80200090
30CE 0  0192            DC      W30CE+1     INDIRECT LDX FAILED         80200100
30CF 0  01A1            DC      W30CF+1     ACC GONE AFTER STX          80200110
30D0 0  01AA            DC      W30D0+1     IX 1 NDT STORED             80200120
30D1 0  01B3            DC      W30D1+1     IX 2 NOT STORED             80200130
30D2 0  01BC            DC      W30D2+1     IX 3 NDT STORED             80200140
30D3 0  01C6            DC      W30D3+1     IX 1 NOT STORED             80200150
30D4 0  01D0            DC      W30D4+1     IX 2 NDT STORED             80200160
30D5 0  01DA            DC      W30D5+1     IX 3 NOT STORED             80200170
30D6 0  01E9            DC      W30D6+1     IX 1 FAILED TO SKIP         80200180
30D7 0  01EF            DC      W30D7+1     IX2 CHANGED                 80200190
30D8 0  01F5            DC      W30D8+1     IX3 CHANGED                 80200200
30D9 0  0200            DC      W30D9+1     IX2 FAILED TO SKIP          80200210
30DA 0  0206            DC      W30DA+1     IX3 CHANGED                 80200220
30DB 0  020C            DC      W30DB+1     IX3 CHANGED                 80200230
30DC 0  0217            DC      W30DC+1     IX3 FAILED TO SKIP          80200240
30DD 0  021D            DC      W30D0+1     IX1 CHANGED                 80200250
30DE 0  0223            DC      W30DE+1     IX2 CHANGED                 80200260
30DF 0  0230            DC      W30DF+1     WRONG DECODE OF ACC         80200270
30E0 0  0238            DC      W30E0+1     WRONG DECODE OF ACC         80200280
30E1 0  0246            DC      W30E1+1     WRONG DECODE OF ACC         80200290
30E2 0  0252            DC      W30E2+1     OVERFLOW IS ON              80200300
30E3 0  025C            DC      W30E3+1     CARRY NOT ON OR             80200310
                    *                       ADD 0001+FFFF FAILED        80200320
30E4 0  0267            DC      W30E4+1     CARRY NOT ON OR             80200330
                    *                       ADD-FFFF+FFFF FAILED        80200340
30E5 0  0272            DC      W30E5+1     OVERFLOW NDT ON OR          80200350
                    *                       ADD 4000+4000 FAILED        80200360
30E6 0  027A            DC      W30E6+1     ADD 8000+8000 FAILED        80200370
30E7 0  0282            DC      W30E7+1     OVERFLOW NDT ON             80200380
30E8 0  0287            DC      W30E8+1     CARRY NDT ON                80200390
                    ********************************************        80200400
30E9                    DRG     342                                     80200410
                    ********************************************        80200420
0156 0  02C0        PID DC      /0200       PID                         80200430
                    *                                                   80200440
0107                CNTL EQU    /0107                                   80200450
0115                F000 EQU    /0115                                   80200460
                    ********************************************        80200470
0157 00 65C00001    B600 LDX    L1 1                                    80200480
0159 0  C030             LD     N603                                    80200490
015A 00 C5C00195         LD     L1 N601                                 80200500
015C 0  F039             EOR    N602                                    80200510
015D 00 44C00115         BSI L  F000        CHECK ERR OR LOOP SW        80200520
015F 0  30C9        W30C9 DC    /30C9       LONG FORM LDX-FAILED        80200530
0160 0  70F6             MDX    B600        LDDP                        80200540
                    ********************************************        80200550
0161 00 66000001    B601 LOX    L2 1                                    80200560
0163 0  C033             LD     N603                                    80200570
0164 00 C6000195         LO     L2 N601                                 80200580
0166 0  F02F             EOR    N602                                    80200590
0167 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80200600
0169 0  30CA        W30CA OC    /30CA       LONG LOX FAILED             80200610
016A 0  70F6             MDX    B601        LOOP                        80200620
                    ********************************************        80200630
0168 00 67000001    B602 LOX    L3 1                                    80200640
016C 0  C029             LO     N603                                    80200650
016E 00 C7000195         LO     L3 N601                                 80200660
0170 0  F025             EOR    N602                                    80200670
                                                                        80200680
```



```
0171 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80200690
0173 0  30CB        W30CB OC    /30CB       LONG LDX FAILED             80200700
0174 0  70F6             MDX    B602                                    80200710
                    ********************************************        80200720
0175 00 65800197    B603 LDX    I1 N603                                 80200730
0177 0  C020             LD     N604                                    80200740
0178 00 C5000195         LD     L1 N601                                 80200750
017A 0  F019             EOR    N600                                    80200760
017B 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80200770
017D 0  30CC        W30CC DC    /30CC       INDIRECT LDX FAILED         80200780
017E 0  70F6             MDX    B603        LOOP                        80200790
                    ********************************************        80200800
017F 00 66800197    B604 LDX    I2 N603                                 80200810
0181 0  C016             LD     N604                                    80200820
0182 00 C6000195         LD     L2 N601                                 80200830
0184 0  F00F             EOR    N600                                    80200840
0185 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80200850
0187 0  30CD        W30CD OC    /30CD       INDIRECT LDX FAILED         80200860
0188 0  70F6             MDX    B604        LOOP                        80200870
                    ********************************************        80200880
0189 00 67800197    B605 LOX    I3 N603                                 80200890
018B 0  C00C             LD     N604                                    80200900
018C 00 C7000195         LD     L3 N601                                 80200910
018E 0  F005             EOR    N600                                    80200920
018F 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80200930
0191 0  30CE        W30CE OC    /30CE       INDIRECT LDX FAILED         80200940
0192 0  70F6             MDX    B605        LOOP                        80200950
                    ********************************************        80200960
0193 0  7005             MDX    A640        EXIT                        80200970
0194 0  0194        N600 OC     N600        CONSTANT                    80200980
0195 0  0195        N601 OC     N601        CONSTANT                    80200990
0196 0  0196        N602 OC     N602        CONSTANT                    80201000
0197 0  FFFF        N603 DC     /FFFF       CONSTANT                    80201010
0198 0  0001        N604 DC     /0001       CONSTANT                    80201020
                    ********************************************        80201030
                    *                                                   80201040
                    *           TEST OF STX OPERATION                   80201050
                    *                                                   80201060
                    ********************************************        80201070
0199 0  C044        A640 LD     N644                                    80201080
019A 0  D041             STO    N640                                    80201090
019B 0  C0FF        H640 LO     H640                                    80201100
019C 0  683F             STX    N640                                    80201110
019D 0  F0FD             EDR    H640                                    80201120
019E 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80201130
01A0 0  30CF        W30CF OC    /30CF       ACC GONE AFTER STX          80201140
01A1 0  70F7             MDX    A640        LOOP                        80201150
                    ********************************************        80201160
01A2 0  C03B        A642 LD     N644                                    80201170
01A3 0  D038             STO    N640                                    80201180
01A4 0  6100             LDX  1 0                                       80201190
01A5 0  6936             STX  1 N640                                    80201200
01A6 0  C035             LD     N640                                    80201210
01A7 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80201220
01A9 0  30D0        W30D0 DC    /30D0       IX 1 NDT STORED             80201230
01AA 0  70F7             MDX    A642        LOOP                        80201240
                    ********************************************        80201250
01AB 0  C032        A644 LD     N644                                    80201260
01AC 0  002F             STO    N640                                    80201270
01AD 0  6200             LDX  2 0                                       80201280
01AE 0  6A2D             STX  2 N640                                    80201290
01AF 0  C02C             LD     N640                                    80201300
01B0 00 44000115         BSI L  F000        CHECK ERR OR LOOP SW        80201310
01B2 0  3001        W3001 OC    /3001       IX 2 NOT STORED             80201320
01B3 0  70F7             MDX    A644        LOOP                        80201330
                    ********************************************        80201340
01B4 0  C029        A646 LO     N644                                    80201350
01B5 0  0026             STO    N640                                    80201360
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01B6 0  6300              LOX   3 0                                  80201370
01B7 0  6B24              STX   3 N640                               80201380
01B8 0  C023              LD    N640                                 80201390
01B9 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201400
01BB 0  30D2      W3002   DC    /3002       9X 3 NOT STORED          80201410
01BC 0  70F7              MDX   A646        LOOP                     80201420
                  ********************************************       80201430
01BD 0  C01F      A648    LD    N643                                 80201440
01BE 0  001D              STO   N640                                 80201450
01BF 0  61FF              LDX   1 -1                                 80201460
01C0 0  691B              STX   1 N640                               80201470
01C1 0  C01A              LD    N640                                 80201480
01C2 0  F018              EOR   N644                                 80201490
01C3 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201500
01C5 0  30D3      W3003   DC    /30D3       1X 1 NOT STORED          80201510
01C6 0  70F6              MDX   A648        LOOP                     80201520
                  ********************************************       80201530
01C7 0  C015      A64A    LD    N643                                 80201540
01C8 0  0013              STO   N640                                 80201550
01C9 0  62FF              LDX   2 -1                                 80201560
01CA 0  6A11              STX   2 N640                               80201570
01CB 0  C010              LD    N640                                 80201580
01CC 0  F011              EOR   N644                                 80201590
01CD 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201600
01CF 0  30D4      W30D4   DC    /30D4       IX 2 NOT STORED          80201610
01D0 0  70F6              MDX   A64A        LOOP                     80201620
                  ********************************************       80201630
01D1 0  C00B      A64C    LD    N643                                 80201640
01D2 0  0009              STO   N640                                 80201650
01D3 0  63FF              LDX   3 -1                                 80201660
01D4 0  6B07              STX   3 N640                               80201670
01D5 0  C006              LD    N640                                 80201680
01D6 0  F007              EOR   N644                                 80201690
01D7 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201700
01D9 0  30D5      W30D5   DC    /30D5       IX 3 NOT STORED          80201710
01DA 0  70F4              MDX   A64C        LOOP                     80201720
*                                                                    80201730
01DB 0  7003              MDX   A660        EXIT                     80201740
                  ********************************************       80201750
01DC 0  0000      N640    DC    /0000       STORAGE                  80201760
01DD 0  0000      N643    DC    /0000       CONSTANT                 80201770
01DE 0  FFFF      N644    DC    /FFFF       CONSTANT                 80201780
                  ********************************************       80201790
01DF 0  6100      A660    LOX   1 0                                  80201800
01E0 0  6200              LOX   2 0                                  80201810
01E1 0  6300              LDX   3 0                                  80201820
01E2 0  71FF              MDX   1 -1                                 80201830
01E3 0  7001              MDX   G660                                 80201840
01E4 0  7001              MDX   J660                                 80201850
01E5 0  C0F9      G660    LD    A660                                 80201860
01E6 00 44000115  J660    BSI   L F000      CHECK ERR OR LOOP SW     80201870
01E8 0  30D6      W30D6   DC    /30D6       IX 1 FAILED TO SKIP      80201880
01E9 0  70F5              MDX   A660        LOOP                     80201890
01EA 0  6A3A              STX   2 N660      CK FOR DISTRUCTION OF    80201900
01EB 0  C039              LD    N660        *OTHER INDEXES           80201910
01EC 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201920
01EE 0  30D7      W30D7   DC    /3007       1X2 CHANGED              80201930
01EF 0  70EF              MDX   A660        LOOP                     80201940
01F0 0  6B34              STX   3 N660                               80201950
01F1 0  C033              LD    N660                                 80201960
01F2 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80201970
01F4 0  30D8      W30D8   DC    /30D8       IX3 CHANGED              80201980
01F5 0  70E9              MDX   A660        LOOP                     80201990
                  ********************************************       80202000
01F6 0  6100      A662    LDX   1 0                                  80202010
01F7 0  6200              LDX   2 0                                  80202020
01F8 0  6300              LDX   3 0                                  80202030
01F9 0  72FF              MDX   2 -1                                 80202040
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01FA 0  7001              MDX   B662                                 80202050
01FB 0  7001              MDX   G662                                 80202060
01FC 0  C0F9      B662    LD    A662                                 80202070
01FD 00 44000115  G662    BSI   L F000      CHECK ERR OR LOOP SW     80202080
01FF 0  3009      W30D9   DC    /30D9       IX2 FAILED TO SKIP       80202090
0200 0  70F5              MDX   A662        LOOP                     80202100
0201 0  6923              STX   1 N660                               80202110
0202 0  C022              LD    N660                                 80202120
0203 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80202130
0205 0  30DA      W30DA   DC    /300A       IX1 CHANGED              80202140
0206 0  70EF              MDX   A662        LOOP                     80202150
0207 0  691D              STX   3 N660                               80202160
0208 0  C01C              LD    N660                                 80202170
0209 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80202180
020B 0  300B      W300B   DC    /300B       IX3 CHANGED              80202190
020C 0  70E9              MDX   A662        LOOP                     80202200
                  ********************************************       80202210
020D 0  6100      A664    LDX   1 0         CK DISTRUCTION OF        80202220
020E 0  6200              LOX   2 0         OTHER INDEXES            80202230
020F 0  6300              LOX   3 0                                  80202240
0210 0  73FF              MDX   3 -1                                 80202250
0211 0  7001              MDX   B664                                 80202260
0212 0  7001              MDX   G664                                 80202270
0213 0  C0F9      B664    LD    A664                                 80202280
0214 00 44000115  G664    BSI   L F000      CHECK ERR OR LOOP SW     80202290
0216 0  300C      W300C   DC    /30DC       IX3 FAILED TO SKIP       80202300
0217 0  70F5              MDX   A664        LOOP                     80202310
0218 0  69CC              STX   1 N660                               80202320
0219 0  C00B              LD    N660                                 80202330
021A 00 44000115          BSI   L F000      CHECK ERR OR LOOP SW     80202340
021C 0  30DD      W300D   DC    /30DD       IX1 CHANGED              80202350
021D 0  70EF              MDX   A664        LOOP                     80202360
021E 0  6A06              STX   2 N660                               80202370
021F 0  C005              LD    N660                                 80202380
0220 00 44000115          BSI   L F000      CK ERR OR LOOP SW        80202390
0222 0  300E      W300E   DC    /300E       IX2 CHANGED              80202400
0223 0  70E9              MDX   A664        LOOP                     80202410
*                                                                    80202420
0224 0  7001              MDX   A670        EXIT                     80202430
                  ********************************************       80202440
0225 0  0000      N660    DC    /0000       STORAGE                  80202450
                  ********************************************       80202460
0226 0  6110      A670    LOX   1 16                                 80202470
0227 0  C020              LD    N670        LOAD ONE                 80202480
0228 00 4C1B022D  G671    BSC   L G670,+-                            80202490
022A 0  1001              SLA   1                                    80202500
022B 0  71FF              MDX   1 -1                                 80202510
022C 0  70FB              MDX   G671                                 80202520
022D 00 44000115  G670    BSI   L F000      CHECK ERR OR LOOP SW     80202530
022F 0  30DF      W30DF   DC    /30DF       WRONG DECODE OF ACC      80202540
0230 0  70F5              MDX   A670        LOOP                     80202550
                  ********************************************       80202560
0231 0  6210      A671    LOX   2 16                                 80202570
0232 0  C015              LD    N670        LOAD ONE                 80202580
0233 00 4C1B0238  G673    BSC   L G675,+-                            80202590
0235 0  1001              SLA   1                                    80202600
0236 0  72FF              MDX   2 -1                                 80202610
0237 0  70F8              MDX   G673                                 80202620
0238 00 44000115  G675    BSI   L F000      CHECK ERR OR LOOP SW     80202630
023A 0  30E0      W30E0   DC    /30E0       WRONG DECODE OF ACC      80202640
023B 0  70F5              MDX   A671        LOOP                     80202650
                  ********************************************       80202660
023C 0  6310      A672    LDX   3 16                                 80202670
023D 0  C00A              LD    N670        LOAD ONE                 80202680
023E 00 4C1B0243  G676    BSC   L G678,+-                            80202690
0240 0  1001              SLA   1                                    80202700
0241 0  73FF              MDX   3 -1                                 80202710
0242 0  70FB              MDX   G676                                 80202720
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TEST5

```
0243 00 44000115    G678  BSI  L  F000       CHECK ERR OR LOOP SW      80202730
0245 0  30E1        W30E1 DC      /30E1      WRONG DECODE OF ACC       80202740
0246 0  70F5              MDX     A672       LOOP                      80202750
                    *                                                 80202760
0247 0  7001              MDX     A680       EXIT                      80202770
                    ********************************************      80202780
0248 0  0001        N670  DC      /0001      CONSTANT                  80202790
                    ********************************************      80202800
                    *                                                 80202810
                    *              TEST OF ADD OPERATION              80202820
                    *                                                 80202830
                    ********************************************      80202840
0249 0  2002        A680  LDS     2                                    80202850
024A 0  C03F              LD      N680                                 80202860
024B 0  803F              A       N681                                 80202870
024C 00 4C01024F          BSC  L  G680,0                               80202880
024E 0  F038              EOR     N680                                 80202890
024F 00 44000115    G680  BSI  L  F000       CHECK ERR OR LOOP SW      80202900
0251 0  30E2        W30E2 OC      /30E2      OVERFLOW IS ON            80202910
0252 0  70F6              MDX     A680       LOOP                      80202920
                    ********************************************      80202930
0253 0  2000        A684  LDS     0                                    80202940
0254 0  C035              LD      N680                                 80202950
0255 0  8036              A       N682                                 80202960
0256 00 4C020259          BSC  L  G684,C                               80202970
0258 0  C031              LD      N680                                 80202980
0259 00 44000115    G684  BSI  L  F000       CHECK ERR OR LOOP SW      80202990
025B 0  30E3        W30E3 DC      /30E3      CARRY NOT ON OR           80203000
                    *                        ADD 0001+FFFF FAILED      80203010
025C 0  70F6              MDX     A684       LOOP                      80203020
                    ********************************************      80203030
025D 0  2000        A688  LDS     0                                    80203040
025E 0  C026              LD      N680                                 80203050
025F 0  802A              A       N680                                 80203060
0260 00 4C020263          BSC  L  G688,C                               80203070
0262 0  7001              MDX     G689                                 80203080
0263 0  F02C        G688  EOR     N687                                 80203090
0264 00 44000115    G689  BSI  L  F000       CHECK ERR OR LOOP SW      80203100
0266 0  30E4        W30E4 OC      /30E4      CARRY NOT ON OR           80203110
0267 0  70F5              MDX     A688       LOOP                      80203120
                    ********************************************      80203130
0268 0  2000        A68C  LDS     0                                    80203140
0269 0  C023              LD      N683                                 80203150
026A 0  8022              A       N683                                 80203160
026B 00 4C01026E          BSC  L  G68C,0                               80203170
026D 0  7001              MDX     G68E                                 80203180
026E 0  F01F        G68C  EOR     N684                                 80203190
026F 00 44000115    G68E  BSI  L  F000       CHECK ERR OR LOOP SW      80203200
0271 0  30E5        W30E5 DC      /30E5      OVERFLOW NOT ON OR        80203210
                    *                        ADD 4000+4000 FAILED      80203220
0272 0  70F5              MDX     A68C       LOOP                      80203230
                    ********************************************      80203240
0273 0  2000        8680  LDS     0                                    80203250
0274 0  C019              LD      N684                                 80203260
0275 0  8018              A       N684                                 80203270
0276 0  281A              STS     N688                                 80203280
0277 00 44000115          BS1  L  F000       CHECK ERR OR LOOP SW      80203290
0279 0  30E6        W30E6 DC      /30E6      ADD 8000+8000 FAILED      80203300
027A 0  70F8              MDX     8680       LOOP                      80203310
027B 0  C015              LD      N688                                 80203320
027C 0  F012              EOR     N686                                 80203330
027D 00 4C040284          BSC  L  K682,E                               80203340
027F 00 44000115          BS1  L  F000       CHECK ERR OR LOOP SW      80203350
0281 0  30E7        W30E7 OC      /30E7      OVERFLOW NOT ON           80203360
0282 0  70F0              MDX     8680       LOOP                      80203370
0283 0  7004              MDX     A6C0                                 80203380
0284 00 44000115    K682  BSI  L  F000       CHECK ERR OR LOOP SW      80203390
0286 0  30E8        W30E8 OC      /30E8      CARRY NOT ON              80203400
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```
0287 0  70E8              MDX     B680       LOOP                      80203410
                    ********************************************      80203420
0288 00 4C000107    A6C0  BSC  L  CNTL       RETURN TO READ NEXT SEC   80203430
                    ********************************************      80203440
028A 0  FFFF        N680  DC      /FFFF      CONSTANT                  80203450
028B 0  0000        N681  DC      /0000      CONSTANT                  80203460
028C 0  0001        N682  DC      /0001      CONSTANT                  80203470
028D 0  4000        N683  DC      /4000      CONSTANT                  80203480
028E 0  8000        N684  DC      /8000      CONSTANT                  80203490
028F 0  0003        N686  DC      /0003      CONSTANT                  80203500
0290 0  FFFE        N687  DC      /FFFE      CONSTANT                  80203510
0291 0  0000        N688  DC      /0000      STORAGE                   80203520
                    ********************************************      80203530
0292      013C            END   X  *-PID     END CARD NOT USED  8020353 80203540
```

DIMAL HEADER TEST (CARD)
TEST5

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A6C0	0288	0283
A64A	01C7	0100
A64C	0101	010A
A640	0199	0193,0141
A642	01A2	01AA
A644	01AB	0183
A646	01B4	018C
A64B	01B0	01C6
A660	010F	01DB,01E5,01E9,01EF,01F5
A662	01F6	01FC,0200,0206,020C
A664	0200	0213,0217,0210,0223
A670	0226	0224,0230
A671	0231	023B
A672	023C	0246
A68C	0268	0272
A680	0249	0247,0252
A684	0253	025C
A688	0250	0267
B600	0157	0160
B601	0161	016A
B602	0168	0174
B603	0175	017E
B604	017F	0188
B605	0189	0192
B662	01FC	01FA
B664	0213	0211
B680	0273	027A,0282,0287
CNTL	0107	0288
F000	0115	015D,0167,0171,0178,0185,018F,019E,01A7,01B0,0189, 01C3,01CD,01D7,01E6,01EC,01F2,01FD,0203,0209,0214, 021A,0220,0220,0238,0243,024F,0259,0264,026F,0277, 027F,0284
G660	01E5	01E3
G662	01F0	01F8
G664	0214	0212
G670	0220	0228
G671	0228	022C
G673	0233	0237
G675	0238	0233
G676	023E	0242
G678	0243	023E
G68C	026E	0268
G68E	026F	0260
G680	024F	024C
G684	0259	0256
G688	0263	0260
G689	0264	0262
H640	0198	0198,0190
J660	01E6	01E4
K682	0284	0270
N600	0194	017A,0184.018E,0194
N601	0195	015A,0164,016E,0178,0182,018C,0195
N602	0196	015C,0166,0170,0196
N603	0197	0159,0163,016D,0175,017F,0189
N604	0198	0177,0181,018B
N640	010C	019A,019C,01A3,01A5,01A6,01AC,01AE,01AF,0185,0187, 0188,018E,01C0,01C1,01CB,01CA,01CB,0102,01D4,01D5
N643	010D	018D,01C7,0101
N644	010E	0199,01A2,01AB,0184,01C2,01CC,0106
N660	0225	01FA,C1FB,01F0,01F1,0201,0202,0207,0208,0218,0219, 021E,021F
N670	0248	0227,0232,0230
N680	028A	024A,024E,0254,0258,025E,025F
N681	028B	024B
N682	028C	0255

DIMAL HEADER TEST (CARD)
TEST5

N683	0280	0269,026A
N684	028E	026E,0274,0275
N686	028F	027C
N687	0290	0263
N688	0291	0276,027B
PIO	0156	0292
W30CA	0169	30CA
W30CB	0173	30C8
W30CC	0170	30CC
W30CD	0187	30CD
W30CE	0191	30CE
W30CF	01A0	30CF
W30C9	015F	30C9
W300A	0205	300A
W3008	0208	3008
W300C	0216	300C
W300D	021C	3000
W300E	0222	300E
W300F	022F	300F
W3000	01A9	3000
W3001	0182	3001
W3002	0188	3002
W3003	01C5	3003
W3004	01CF	3004
W3005	0109	3005
W3006	01E8	3006
W3007	01EE	3007
W3008	01F4	3008
W3009	01FF	3009
W30E0	023A	30E0
W30E1	0245	30E1
W30E2	0251	30E2
W30E3	0258	30E3
W30E4	0266	30E4
W30E5	0271	30E5
W30E6	0279	30E6
W30E7	0281	30E7
W30E8	0286	30E8

```
02BC                        ABS
                            ORG     /30E9
                    ********************************************
                    *           WAITS       ERROR COMMENTS
                    ********************************************
30E9 0  015E                DC      W30E9+1     WRONG LOCATION
30EA 0  0165                DC      W3DFA+1     IX 1 LOADED WRONG
30EB 0  016D                DC      W30EB+1     WRONG LOCATION
30EC D  0174                DC      W30EC+1     IX 2 LOADED WRONG
30ED 0  017C                DC      W30ED+1     WRONG LOCATION
30EE 0  0182                DC      W30EE+1     IX 3 LOADED WRONG
30EF 0  018A                DC      W30EF+1     WRONG LOCATION
30F0 0  0191                DC      W30F0+1     IX 3 LOADED WRONG
30F1 0  0199                DC      W30F1+1     WRONG LOCATION
30F2 0  01A0                DC      W30F2+1     IX 3-LOADED WRONG
30F3 0  01E7                DC      W30F3+1     SHORT INDEX FAILED
30F4 0  01BF                DC      W30F4+1     SHORT INDEX FAILED
30F5 0  01C7                DC      W30F5+1     SHORT INDEX FAILED
30F6 0  01CF                DC      W30F6+1     INDEXED SLA FAILED
30F7 0  01D7                DC      W30F7+1     INDEXED SRA FAILED
30F8 0  01E2                DC      W30F8+1     INDEXED BSC FAILED
30F9 0  01EF                DC      W30F9+1     BSC INDIRECT FAILED
30FA 0  01FB                DC      W30FA+1     0001 MINUS 0000 FAIL
30FB 0  01FE                DC      W30FB+1     CARRY NOT ON
30FC 0  0207                DC      W30FC+1     FFFF MINUS 0000 FAIL
30FD 0  020D                DC      W30FD+1     CARRY NOT SET
30FE 0  0216                DC      W30FE+1     0001 MINUS 8000 FAIL
30FF 0  021C                DC      W30FF+1     OVERFLOW NOT SET
3100 0  0225                DC      W3100+1     8000 MINUS 0000 FAIL
3101 0  022D                DC      W3101+1     CARRY NOT ON
3102 0  0231                DC      W3102+1     OVERFLOW NOT ON
3103 0  0242                DC      W3103+1     IXJ FAILED TO SKIP
3104 0  0249                DC      W3104+1     MDX IX1 FAILED
3105 0  0254                DC      W3105+1     MDX LONG IX 2 FAILED
3106 0  025D                DC      W3106+1     IX 3 NO SKIP AT 0
3107 0  0266                DC      W3107+1     SIGN CHANGE-NO SKIP
3108 0  0271                DC      W3108+1     ACC GONE AFTER MDX I
3109 0  0277                DC      W3109+1     INDIRECT MDX FAILED
310A 0  027F                DC      W310A+1     MDX L  FAILED TO SKIP
310B 0  0288                DC      W310B+1     MDX L SKIPPED-ERROR
                    ********************************************
                    *
310C                        ORG     342
                    *
0156 0  0200        PID     DC      /0200       P10
                    *
0107                CNTL    EQU     /0107
0115                F000    EQU     /0115
                    ********************************************
                    *
                    *               INDEXING TEST
                    *
                    ********************************************
0157 0  6IFC        A6C0    LOX     1 -4
0158 00 C50001A6            LD      L1 N6C4
015A 0  F047                EOR     N6C0
015B 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0150 0  30E9        W30E9   DC      /30E9       WRONG LOCATION
D15E 0  70F8                MDX     A6C0        LOOP
015F 0  6943                STX     1 N6C9
0160 0  C04A                LD      N6CA
0161 0  F04A                EOR     N6CA
0162 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0164 0  30EA        W30EA   DC      /30EA       IX 1 LOADED WRONG
0165 0  70F1                MDX     A6C0        LOOP
                    ********************************************
0166 0  62C4        A6C2    LOX     2 4
0167 00 C60001A6            LD      L2 N6C4
```



```
0169 0  F040                EDR     N6C8
016A 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
016C 0  30EB        W30EB   DC      /30EB       WRONG LOCATION
016D 0  70F8                MDX     A6C2        LOOP
016E 0  6A3C                STX     2 N6C9
016F 0  C03B                LD      N6C9
0170 D  F03C                EOR     N6C8
D171 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0173 0  30EC        W30EC   DC      /30EC       IX 2 LOADED WRONG
0174 D  70F1                MDX     A6C2        LOOP
                    ********************************************
0175 D  6300        A6C4    LDX     3 0
0176 00 C70001A6            LD      L3 N6C4
0178 0  F02D                FOR     N6C4
0179 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0178 0  30ED        W30ED   DC      /30E0       WRONG LOCATION
017C 0  70F8                MDX     A6C4        LOOP
017D D  6820                STX     3 N6C9
D17E D  C02C                LD      N6C9
017F 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0181 0  30EE        W30EE   DC      /30EE       IX 3 LOADED WRONG
0182 D  70F2                MDX     A6C4        LOOP
                    ********************************************
0183 D  6301        A6C6    LDX     3 1
0184 00 C70001A6            LD      L3 N6C4
0186 0  F020                EOR     N6C5
D187 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0189 0  30EF        W30EF   DC      /30EF       WRONG LOCATION
018A 0  70F8                MDX     A6C6        LOOP
018B 0  6B1F                STX     3 N6C9
018C 0  C01E                LD      N6C9
0180 0  F020                EOR     N6CD
018E 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0190 0  30F0        W30F0   DC      /30F0       IX 3 LOADED WRONG
0191 0  70F1                MDX     A6C6        LOOP
                    ********************************************
0192 0  63FF        A6C8    LDX     3 -1
0193 00 C78001A7            LO      I3 N6C5
0195 0  F010                EOR     N6C4
0196 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
0198 0  30F1        W30F1   DC      /30F1       WRONG LOCATION
0199 0  70F8                MDX     A6C8        LOOP
D19A 0  6B10                STX     3 N6C9
019B 0  C00F                LD      N6C9
019C 0  F012                EOR     N6CF
019D 00 44000115            BSI  L  F000        CHECK ERR OR LOOP SW
019F 0  30F2        W30F2   DC      /30F2       IX 3-LOADED WRONG
01AD D  70F1                MDX     A6C8        LOOP
                    *
01A1 D  700E                MDX     A6D0        EXIT
                    ********************************************
01A2 0  01A2        N6C0    DC      N6C0        CONSTANT
D1A3 0  01A3        N6C1    DC      N6C1        CONSTANT
01A4 0  01A4        N6C2    DC      N6C2        CONSTANT
01A5 0  D1A5        N6C3    DC      N6C3        CONSTANT
01A6 D  01A6        N6C4    OC      N6C4        CONSTANT
01A7 0  01A7        N6C5    OC      N6C5        CONSTANT
01A8 D  D1A8        N6C6    OC      N6C6        CONSTANT
D1A9 0  01A9        N6C7    DC      N6C7        CONSTANT
01AA 0  01AA        N6C8    OC      N6C8        CONSTANT
01A8 0  0000        N6C9    OC      /0000       STORAGE
01AC 0  FFFC        N6CA    OC      /FFFC       CONSTANT
01A0 0  0004        N6C8    OC      /0004       CONSTANT
D1AE D  0001        N6C0    OC      /0001       CONSTANT
01AF 0  FFFF        N6CF    DC      /FFFF       CONSTANT
                    ********************************************
0180 00 650001A3    A600    LDX     L1 N6C1
01B2 D  C1FF                LD      I -1        SHORT FORM INDEXING
```

```
01B3 0  F0EE            EOR     N6C0                                    80201370
01B4 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80201380
01B6 0  30F3    W30F3   DC      /30F3       SHORT INDEX FAILED          80201390
01B7 0  70F8            MDX     A6D0        LOOP                        80201400
                ********************************************************80201410
01B8 00 660001A3 A6D2   LDX  L2 N6C1                                    80201420
01BA 0  C201            LD      2 1                                     80201430
01BB 0  F0E8            EOR     N6C2                                    80201440
01BC 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80201450
01BE 0  30F4    W30F4   DC      /30F4       SHORT INDEX FAILED          80201460
01BF 0  70F8            MDX     A6D2        LOOP                        80201470
                ********************************************************80201480
01C0 00 670001A3 A6D3   LDX  L3 N6C1                                    80201490
01C2 0  C300            LD      3 0                                     80201500
01C3 0  F0DF            EOR     N6C1                                    80201510
01C4 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80201520
01C6 0  30F5    W30F5   DC      /30F5       SHORT INDEX FAILED          80201530
01C7 0  70F8            MDX     A6D3        LOOP                        80201540
                ********************************************************80201550
01C8 0  6102    A6D5    LDX     1 2                                     80201560
01C9 0  C0E4            LD      N6C0                                    80201570
01CA 0  1101            SLA     1 1                                     80201580
01CB 0  F0E1            EOR     N6C8                                    80201590
01CC 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80201600
01CE 0  30F6    W30F6   DC      /30F6       INDEXED SLA FAILED          80201610
01CF 0  70F8            MDX     A6D5        LOOP                        80201620
                ********************************************************80201630
01D0 0  6202    A6D6    LDX     2 2                                     80201640
01D1 0  C0D8            LD      N6C8                                    80201650
01D2 0  1401            SRA     2 1                                     80201660
01D3 0  F0DA            EOR     N6C0                                    80201670
0104 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80201680
0106 0  30F7    W30F7   DC      /30F7       INDEXED SRA FAILED          80201690
01D7 0  70F8            MDX     A6D6        LOOP                        80201700
                ********************************************************80201710
                *                                                       80201720
                *                   TEST INDEXED BSC                    80201730
                *                                                       80201740
                ********************************************************80201750
01D8 0  6301    A6F0    LDX     3 1                                     80201760
0109 0  C059            LD      N6F1                                    80201770
010A 00 4F0001D0        BSC  L3 N6F0                                    80201780
010C 0  7002            MDX     B6F0                                    80201790
010D 0  7201    N6F0    MDX     B6F0                                    80201800
010E 0  F054            EOR     N6F1        CK FOR DISTROYED ACC        80201810
010F 00 44000115 B6F0   BSI  L  F000        CHECK ERR OR LOOP SW        80201820
01F1 0  30F8    W30F8   DC      /30F8       INDEXED BSC FAILED          80201830
01E2 0  70F5            MDX     A6F0        LOOP                        80201840
                ********************************************************80201850
01E3 0  6201    A6F1    LDX     2 1                                     80201860
01E4 0  1010            SLA     16                                      80201870
01E5 00 4F8001E9        BSC     12 N6F2                                 80201880
01E7 0  7003            MDX     H6F1        BSC FAILED                  80201890
01E8 0  7002            MDX     H6F1        BSC FAILED                  80201900
01E9 0  01E8    N6F2    DC      H6F1        BSC FAILED                  80201910
01EA 0  01EC            DC      H6F3                                    80201920
01EB 0  C0FF    H6F1    LD      H6F1                                    80201930
01EC 00 44000115 H6F3   BSI  L  F000        CHECK ERR OR LOOP SW        80201940
01EE 0  30F9    W30F9   DC      /30F9       BSC INDIRECT FAILED         80201950
01EF 0  70F3            MDX     A6F1        LOOP                        80201960
                ********************************************************80201970
                *                                                       80201980
                *                   TEST OF SUBTRACT OPERATION          80201990
                *                                                       80202000
                ********************************************************80202010
01F0 0  2000    A700    LDS     0                                       80202020
01F1 0  C042            LD      N700                                    80202030
01F2 0  9042            S       N701                                    80202040
```



```
01F3 0  2842            STS     N702                                    80202050
01F4 0  F042            EOR     N703                                    80202060
01F5 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202070
01F7 0  30FA    W30FA   DC      /30FA       0001 MINUS 0000 FAIL        80202080
01F8 0  70F7            MDX     A700        LOOP                        80202090
01F9 0  C03C            LD      N702                                    80202100
01FA 0  F03D            EOR     N704                                    80202110
01FB 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202120
01FD 0  30F8    W30F8   DC      /30F8       CARRY NOT ON                80202130
01FE 0  70F1            MDX     A700        LOOP                        80202140
                ********************************************************80202150
01FF 0  2000    A704    LDS     0                                       80202160
0200 0  C033            LD      N700                                    80202170
0201 0  9035            S       N703                                    80202180
0202 0  2833            STS     N702                                    80202190
0203 0  F031            EOR     N701                                    80202200
0204 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202210
0206 0  30FC    W30FC   DC      /30FC       FFFF MINUS 0000 FAIL        80202220
0207 0  70F7            MDX     A704        LOOP                        80202230
0208 0  C020            LD      N702                                    80202240
0209 0  F02E            EOR     N704                                    80202250
020A 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202260
020C 0  30F0    W30FD   DC      /30FD       CARRY NOT SET               80202270
020D 0  70F1            MDX     A704        LOOP                        80202280
                ********************************************************80202290
020E 0  2000    A708    LDS     0                                       80202300
020F 0  C029            LD      N705                                    80202310
0210 0  9024            S       N701                                    80202320
0211 0  2824            STS     N702                                    80202330
0212 0  F028            EOR     N707                                    80202340
0213 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202350
0215 0  30FE    W30FE   DC      /30FE       0001 MINUS 8000 FAIL        80202360
0216 0  70F7            MDX     A708        LOOP                        80202370
0217 0  C01E            LD      N702                                    80202380
0218 0  F01C            EOR     N701                                    80202390
0219 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202400
021B 0  30FF    W30FF   DC      /30F.       OVERFLOW NOT SET            80202410
021C 0  70F1            MDX     A708        LOOP                        80202420
                ********************************************************80202430
021D 0  2000    A70C    LDS     0                                       80202440
021E 0  C015            LD      N700                                    80202450
021F 0  9019            S       N705                                    80202460
0220 0  2815            STS     N702                                    80202470
0221 0  F017            EOR     N705                                    80202480
0222 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202490
0224 0  3100    W3100   DC      /3100       8000 MINUS 0000 FAIL        80202500
0225 0  70E7            MDX     A70C        LOOP                        80202510
0226 0  C00F            LD      N702                                    80202520
0227 0  F012            EOR     N706                                    80202530
0228 00 4C04022E        BSC  L  H70E,E                                  80202540
022A 00 44000115        BSI  L  F000        CHECK ERR OR LOOP SW        80202550
022C 0  3101    W3101   DC      /3101       CARRY NOT ON                80202560
022D 0  70EF            MDX     A70C        LOOP                        80202570
022E 00 44000115 H70E   BSI  L  F000        CHECK ERR OR LOOP SW        80202580
0230 0  3102    W3102   DC      /3102       OVERFLOW NOT ON             80202590
0231 0  70E8            MDX     A70C        LOOP                        80202600
                *                                                       80202610
0232 0  7009            MDX     A840        LOOP                        80202620
                ********************************************************80202630
0233 C  0233    N6F1    DC      N6F1        CONSTANT                    80202640
0234 0  0000    N700    DC      /0000       CONSTANT                    80202650
0235 0  0001    N701    DC      /0001       CONSTANT                    80202660
0236 0  0000    N702    DC      /0000       STORAGE                     80202670
0237 0  FFFF    N703    DC      /FFFF       CONSTANT                    80202680
0238 0  0002    N704    DC      /0002       CONSTANT                    80202690
0239 0  8000    N705    DC      /8000       CONSTANT                    80202700
023A 0  0003    N706    DC      /0003       CONSTANT                    80202710
0238 0  7FFF    N707    DC      /7FFF       CONSTANT                    80202720
```

```
                        ***********************************************
                        *                                             *
                        *                TEST OF MDX OPERATION        *
                        *                                             *
                        ***********************************************
023C 0  6100    A840    LDX   1 0                                      80202730
023D 0  71FF            MDX   1 -1                                     80202740
023E 0  C0F0            LD    A840                                     80202750
023F 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80202760
0241 0  3103    W3103   DC    /3103       IX1 FAILED TO SKIP           80202770
0242 0  70F9            MDX   A840                                     80202780
0243 0  6948            STX   1 N840                                   80202790
0244 0  C047            LD    N840                                     80202800
0245 0  F047            EOR   N841                                     80202810
0246 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80202820
0248 0  3104    W3104   DC    /3104       MDX IX1 FAILED               80202830
0249 0  70F2            MDX   A840       LOOP                         80202840
                        ***********************************************80202850
024A 00 6600FFFE    A844 LDX  L2 -2                                    80202860
024C 00 7600001     A844 MDX  L2 1                                     80202870
024E 0  6A20            STX   2 N840                                   80202880
024F 0  C03C            LD    N840                                     80202890
0250 0  F03C            EOR   N841                                     80202900
0251 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80202910
0253 0  3105    W3105   DC    /3105       MDX LONG IX 2 FAILED         80202920
025  0  70F5            MDX   A844       LOOP                         80202930
                        ***********************************************80202940
0255 0  63FF        A846 LDX   3 -1                                    80202950
0256 0  C0FE            LD    A846                                     80202960
0257 0  7301            MDX   3 1                                      80202970
0258 0  7001            MDX   G846                                     80202980
0259 0  1010            SLA   16                                       80202990
025  00 44000115    G846 BSI  L F000       CHECK ERR OR LOOP SW         80203000
025C 0  3106    W3106   DC    /3106       IX 3 NO SKIP AT 0            80203010
025D 0  70F7            MDX   A846       LOOP                         80203020
                        ***********************************************80203030
025E 0  61FF        A848 LDX   1 -1                                    80203040
025F 0  C0FE            LD    A848                                     80203050
0260 0  7104            MDX   1 4                                      80203060
0261 0  7001            MDX   G848                                     80203070
0262 0  1010            SLA   16                                       80203080
0263 00 44000115    G848 BSI  L F000       CHECK ERR OR LOOP SW         80203090
0265 0  3107    W3107   DC    /3107       SIGN CHANGE-NO SKIP          80203100
0266 0  70F7            MDX   A848       LOOP                         80203110
                        ***********************************************80203120
0267 00 6500FFFE    A849 LDX  L1 -2                                    80203130
0269 0  C0FF        H849 LD    H849                                    80203140
026A 00 7500028F        MDX  I1 N845                                   80203150
026C 0  691F            STX   1 N840                                   80203160
026D 0  F0F8            EOR   H849                                     80203170
026E 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80203180
0270 0  3108    W3108   DC    /3108       ACC GONE AFTER MDX I         80203190
0271 0  70F5            MDX   A849       LOOP                         80203200
0272 0  C019            LD    N840                                     80203210
0273 0  F019            EOR   N841                                     80203220
0274 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80203230
0276 0  3109    W3109   DC    /3109       INDIRECT MDX FAILED          80203240
0277 0  70EF            MDX   A849       LOOP                         80203250
                        ***********************************************80203260
0278 0  1010        A84A SLA   16                                      80203270
0279 00 7400028B        MDX  L N84A,0     TEST SKIP IF ZERO            80203280
027B 0  C0FC            LD    A84A                                     80203290
027C 00 44000115        BSI  L F000       CHECK ERR OR LOOP SW         80203300
027F 0  310A    W310A   DC    /310A       MDX L  FAILED TO SKIP        80203310
027F 0  70F8            MDX   A84A       LOOP                         80203320
                        ***********************************************80203330
0280 0  1010        A85A SLA   16                                      80203340
0281 00 7400028F        MDX  L N844,0     TEST NON SKIP                80203350
                                                                       80203360
                                                                       80203370
                                                                       80203380
                                                                       80203390
                                                                       80203400
```



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0283 0  70C1            MDX   H85A                                     80203410
0284 0  C008            LD    N841                                     80203420
0285 00 44000115    H85A BSI  L F000       CHECK ERR OR LOOP SW         80203430
0287 0  3108    W3108   DC    /3108       MDX L SKIPPED-ERROR          80203440
0288 0  70F7            MDX   A85A       LOOP                         80203450
                        ***********************************************80203460
0289 00 4C000107        BSC  L CNTL       RETURN TO CONTROL            80203470
                        ***********************************************80203480
028A 0  0000        N84A DC    /0000       CONSTANT                    80203490
028C 0  0000        N840 DC    /0000       STORAGE                     80203500
028D 0  FFFF        N841 DC    /FFFF       CONSTANT                    80203510
028E 0  0001        N844 DC    /0001       CONSTANT                    80203520
028F 0  028E        N845 DC    N844        CONSTANT                    80203530
                        ***********************************************80203540
0290    013A            END   X *-PID     END CARD NOT USED  8020354   80203550
```

DIMAL HEADER TEST (CARD)
TEST6

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A6C0	0157	015E,0165
A6C2	0166	0160,0174
A6C4	0175	017C,0182
A6C6	0183	018A,0191
A6C8	0192	0199,01A0
A6D0	01B0	01A1,01B7
A6D2	01B8	01BF
A6D3	01C0	01C7
A6D5	01C8	01CF
A6D6	0100	01D7
A6F0	01D8	01E2
A6F1	01E3	01EF
A70C	021D	0225,0220,0231
A700	01F0	01F8,01FE
A704	01FF	0207,020C
A708	020E	0216,021C
A84A	0278	0278,027F
A84C	023C	0232,023E,0242,0249
A844	024A	0254
A846	0255	0256,0250
A848	025E	025F,0266
A849	0267	0271,0277
A85A	0280	0288
B6F0	010F	010C,01DD
CNTL	0107	0289
F000	0115	0158,0162,016A,0171,017?,017F,0187,018E,0196,019D, 01B4,01BC,01C4,01CC,01D4,01DF,01EC,01F5,01FB,0204, 020A,0213,0219,0222,022A,022E,023F,0246,0251,025A, 0263,026E,0274,027C,0285
G846	025A	0258
G848	0263	0261
H6F1	01EB	01E7,01E8,01E9,01EB
H6F3	01EC	01EA
H70E	022E	0228
H849	0269	0269,026D
H85A	0285	0283
N6CA	01AC	0181
N6CB	01AD	0170,01CB,01D1
N6CD	01AE	0180,01C9,01D3
N6CF	01AF	019C
N6C0	01A2	015A,01A2,01B3
N6C1	01A3	01A3,01B0,01B8,01C0,01C3
N6C2	01A4	01A4,01BB
N6C3	01A5	01A5
N6C4	01A6	0158,0167,0176,0178,0184,0195,01A6
N6C5	01A7	0186,0193,01A7
N6C6	01A8	01A8
N6C7	01A9	01A9
N6C8	01AA	0169,01AA
N6C9	01AB	015F,0160,016E,016F,017D,017E,0188,018C,019A,019B
N6F0	01DD	01DA
N6F1	0233	0109,01DE,0233
N6F2	01E9	01E5
N700	0234	01FI,0200,021E
N701	0235	01F2,0203,0210,0218
N702	0236	01F3,01F9,0202,0208,0211,0217,0220,0226
N703	0237	01F4,0201
N704	0238	01FA,0209
N705	0239	020F,021F,0221
N706	023A	0227
N707	023B	0212
N84A	0288	0279
N840	026C	0243,0244,024E,024F,026C,0272
N841	0260	0245,0250,0273,0284
N844	028E	0281,028F

DIMAL HEADER TEST (CARD)
TEST6

NE45	02BF	026A
PID	0156	0290
W30EA	0164	30EA
W30EB	016C	30EB
W30EC	0173	30EC
W30ED	0178	30ED
W30EE	0181	30EE
W30EF	0189	30EF
W30E9	015D	30E9
W30FA	01F7	30FA
W30FB	01FD	30FB
W30FC	0206	30FC
W30FD	020C	30FD
W30FE	0215	30FE
W30FF	021B	30FF
W30F0	0190	30F0
W30F1	019B	30F1
W30F2	019F	30F2
W30F3	01B6	30F3
W30F4	01BE	30F4
W30F5	01C6	30F5
W30F6	01CE	30F6
W30F7	01D6	30F7
W30F8	01E1	30F8
W30F9	01EE	30F9
W310A	027E	310A
W310B	0287	310B
W3100	0224	3100
W3101	022C	3101
W3102	0230	3102
W3103	0241	3103
W3104	0248	3104
W3105	0253	3105
W3106	025C	3106
W3107	0265	3107
W3108	0270	3108
W3109	0276	3109

DIMAL HEADER TEST (CARD)
TEST7

```
                        A8S
028C                    ORG     /310C                                   80200010
                                                                        80200020
                    ********************************************        80200030
                    *           WAITS       ERROR COMMENTS       *      80200040
                    ********************************************        80200050
310C 0 015C             DC      W310C+1     SLCA 16 FAILED              80200060
3100 0 0163             DC      W310D+1     SLCA 1 FAILED               80200070
310E 0 0169             DC      W310E+1     SLCA 1 FAILED               80200080
310F 0 0170             DC      W310F+1     SLCA 15 FAILED              80200090
3110 0 0177             DC      W3110+1     SLCA 14 FAILED              80200100
3111 0 0180             DC      W3111+1     SLC 1 FAILED                80200110
3112 0 0189             DC      W3112+1     SLC 16 FAILED               80200120
3113 0 0191             DC      W3113+1     SLC 32 FAILED               80200130
3114 0 019A             OC      W3114+1     SLC 31 FAILED               80200140
3115 0 01A6             OC      W3115+1     LDD-A REG INCORRECT         80200150
3116 0 01AB             DC      W3116+1     LDD-Q REG INCORRECT         80200160
3117 0 01B1             OC      W3117+1     LDD-A REG INCORRECT         80200170
3118 0 01B7             OC      W3118+1     LDD-Q REG INCORRECT         80200180
3119 0 01BC             OC      W3119+1     LDD ODD-A REG FAILED        80200190
311A 0 01C1             OC      W311A+1     LDD-ODD-Q REG FAILED        80200200
311B 0 01CE             OC      W311B+1     STD ACC INCORRECT           80200210
311C 0 0104             OC      W311C+1     STD Q REG INCORRECT         80200220
311D 0 010F             DC      W311D+1     STD ACC INCORRECT           80200230
311E 0 01E5             OC      W311E+1     STD Q REG INCORRECT         80200240
311F 0 01F1             OC      W311F+1     STD ODD ACC INCORRECT       80200250
3120 0 01F7             OC      W3120+1     STD DDD Q REG STORED        80200260
                    *                       * INTO WRONG WORD           80200270
3121 0 0206             DC      W3121+1     A GREATER THAN M FAIL       80200280
3122 0 020E             OC      W3122+1     A LESS THAN M FAILED        80200290
3123 0 0216             OC      W3123+1     A LESS THAN M FAILED        80200300
3124 0 021E             OC      W3124+1     A LESS THAN M FAILED        80200310
3125 0 0226             OC      W3125+1     A LESS THAN M FAILED        80200320
3126 0 022F             OC      W3126+1     A EQUAL M FAILED            80200330
                    ********************************************        80200340
3127                    DRG     342                                     80200350
                    ********************************************        80200360
0156 0 0200         PID OC      /0200       PIO                         80200370
                    *                                                   80200380
0107                CNTL EQU    /0107                                   80200390
0115                FOOO EQU    /0115                                   80200400
                    ********************************************        80200410
                    *                                          *        80200420
                    *                TEST SLC AND SLCA         *        80200430
                    *                                          *        80200440
                    ********************************************        80200450
0157 0 C048         A888 LO     N284                                    80200460
0158 0 1050              SLCA   16                                      80200470
0159 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200480
015B 0 310C         W310C OC    /310C       SLCA 16 FAILED              80200490
015C 0 70FA              MDX    A888        LOOP                        80200500
                    ********************************************        80200510
015D 0 C040         A889 LO     N282                                    80200520
015E 0 1041              SLCA   1                                       80200530
015F 0 F03C              EOR    N280                                    80200540
0160 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200550
0162 0 310D         W310D DC    /310D       SLCA 1 FAILED               80200560
0163 0 70F9              MDX    A889        LOOP                        80200570
                    ********************************************        80200580
0164 0 C038         A88A LD     N281                                    80200590
0165 0 1041              SLCA   1                                       80200600
0166 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200610
0168 0 310E         W310E DC    /310E       SLCA 1 FAILED               80200620
0169 0 70FA              MDX    A88A        LOOP                        80200630
                    ********************************************        80200640
016A 0 C033         A888 LD     N282                                    80200650
016B 0 104F              SLCA   15                                      80200660
016C 0 F030              EOR    N281                                    80200670
D16D 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200680
```


DIMAL HEADER TEST (CARD)
TEST7

```
D16F 0 310F         W310F DC    /310F       SLCA 15 FAILED              80200690
0170 0 70F9              MDX    A888        LOOP                        80200700
                    ********************************************        80200710
0171 0 C02A         A88C LD     N280                                    80200720
0172 0 104E              SLCA   14                                      80200730
0173 0 F029              EOR    N281                                    80200740
0174 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200750
0176 0 3110         W3110 DC    /3110       SLCA 14 FAILED              80200760
0177 0 70F9              MDX    A88C        LOOP                        80200770
                    ********************************************        80200780
0178 0 C024         A880 LD     N281                                    80200790
0179 0 18D0              RTE    16                                      80200800
017A 0 C026              LO     N300                                    80200810
0178 0 10C1              SLC    1                                       80200820
017C 0 F021              EOR    N282                                    80200830
0170 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200840
017F 0 3111         W3111 OC    /3111       SLC 1 FAILED                80200850
0180 0 70F7              MDX    A88D        LOOP                        80200860
                    ********************************************        80200870
0181 0 C01C         A88E LO     N282                                    80200880
0182 0 1800              RTE    16                                      80200890
0183 0 C01D              LO     N300                                    80200900
0184 0 10D0              SLC    16                                      80200910
0185 0 F018              EOR    N282                                    80200920
0186 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80200930
0188 0 3112         W3112 OC    /3112       SLC 16 FAILED               80200940
0189 0 70F7              MDX    A88E        LOOP                        80200950
                    ********************************************        80200960
018A 0 C015         A88F LO     N284                                    80200970
018B 0 18D0              RTE    16                                      80200980
018C 0 C013              LD     N284                                    80200990
018D 0 10E0              SLC    32                                      80201000
018E 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80201010
0190 0 3113         W3113 OC    /3113       SLC 32 FAILED               80201020
0191 0 70F8              MDX    A88F        LOOP                        80201030
                    ********************************************        80201040
0192 0 C008         A890 LD     N282                                    80201050
0193 0 18D0              RTE    16                                      80201060
0194 0 C00A              LD     N283                                    80201070
0195 0 10DF              SLC    31                                      80201080
0196 0 F006              EOR    N281                                    80201090
0197 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80201100
0199 0 3114         W3114 OC    /3114       SLC 31 FAILED               80201110
019A 0 70F7              MDX    A890        LOOP                        80201120
                    *                                                   80201130
0198 0 7006              MDX    A580        EXIT                        80201140
                    ********************************************        80201150
D19C 0 0002         N28D DC     /0002       CONSTANT                    80201160
019D 0 8000         N281 OC     /8000       CONSTANT                    80201170
019E 0 0001         N282 OC     /0001       CONSTANT                    80201180
019F 0 AAAA         N283 OC     /AAAA       CONSTANT                    80201190
01A0 0 5555         N284 DC     /5555       CONSTANT                    80201200
01A1 0 0000         N300 OC     /0000       CONSTANT                    80201210
                    ********************************************        80201220
                    *                                          *        80201230
                    *                TEST OF LDD OPERATION     *        80201240
                    *                                          *        80201250
                    ********************************************        80201260
01A2 0 C821         A580 LDD    N581                                    80201270
01A3 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80201280
01A5 0 3115         W3115 DC    /3115       LDD-A REG INCORRECT         80201290
01A6 0 70F8              MDX    A580        LOOP                        80201300
01A7 0 18D0              RTE    16                                      80201310
01A8 00 44000115         BSI  L F000        CHECK ERR OR LOOP SW        80201320
01AA 0 3116         W3116 OC    /3116       LDD-Q REG INCORRECT         80201330
01AB 0 70F6              MDX    A580        LOOP                        80201340
                    ********************************************        80201350
01AC D C819         A584 LDD    N583                                    80201360
```

DIMAL HEADER TEST (CARD)
TEST7

```
01AD 0  F019            EOR     N584                                    80201370
01AE 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201380
01B0 0  3117    W3117   DC      /3117   LOD-A REG INCORRECT             80201390
01B1 0  70FA            MDX     A584    LOOP                            80201400
01B2 0  18D0            RTE     16                                      80201410
01B3 0  F013            EOR     N584                                    80201420
01B4 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201430
01B6 0  3118    W3118   DC      /3118   LOD-Q REG INCORRECT             80201440
01B7 0  70F4            MDX     A584    LOOP                            80201450
                        ********************************************    80201460
01B8 0  C80C    A588    LDD     N582                                    80201470
01B9 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201480
01BB 0  3119    W3119   DC      /3119   LDD OOD-A REG FAILED            80201490
01BC 0  70F8            MDX     A588    LOOP                            80201500
01BD 0  18D0            RTE     16                                      80201510
01BE 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201520
01C0 0  311A    W311A   DC      /311A   LDD-ODD-Q REG FAILED            80201530
01C1 0  70F6            MDX     A588    LOOP                            80201540
                *                                                       80201550
01C2 0  7005            MOX     A5C0    EXIT                            80201560
                        ********************************************    80201570
01C4    0000            BSS  E  0                                       80201580
01C4 0  0000    N581    DC      /0000   CONSTANT                        80201590
01C5 0  0000    N582    DC      /0000   CONSTANT                        80201600
01C6 0  FFFF    N583    DC      /FFFF   CONSTANT                        80201610
01C7 0  FFFF    N584    DC      /FFFF   CONSTANT                        80201620
                        ********************************************    80201630
                *                                                       80201640
                *               TEST OF STD OPERATION                   80201650
                *                                                       80201660
                        ********************************************    80201670
01C8 0  C831    A5C0    LDD     N5C1                                    80201680
01C9 0  0832            STD     N5C5                                    80201690
01CA 0  C031            LD      N5C5                                    80201700
01CB 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201710
01CD 0  311B    W3118   DC      /311B   STD ACC INCORRECT               80201720
01CE 0  70F9            MDX     A5C0    LOOP                            80201730
01CF 0  C020            LD      N5C6                                    80201740
0100 0  F02A            EOR     N5C3                                    80201750
01D1 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201760
01D3 0  311C    W311C   DC      /311C   STO Q REG INCORRECT             80201770
01D4 0  70F3            MDX     A5C0    LOOP                            80201780
                        ********************************************    80201790
0105 0  C024    A5C4    LD      N5C1                                    80201800
01D6 0  0025            STO     N5C5                                    80201810
0107 0  0025            STO     N5C6                                    80201820
01D8 0  C822            LOD     N5C3                                    80201830
01D9 0  0822            STD     N5C5                                    80201840
010A 0  C021            LD      N5C5                                    80201850
01DB 0  F01F            EOR     N5C3                                    80201860
01DC 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201870
01DE 0  3110    W3110   DC      /311D   STD ACC INCORRECT               80201880
01DF 0  70F5            MDX     A5C4    LOOP                            80201890
01E0 0  C01C            LO      N5C6                                    80201900
01E1 0  F019            EOR     N5C3                                    80201910
01E2 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80201920
01E4 0  311E    W311E   DC      /311E   STD Q REG INCORRECT             80201930
01E5 0  70EF            MDX     A5C4    LOOP                            80201940
                        ********************************************    80201950
01E6 0  C014    A5C8    LD      N5C3                                    80201960
01E7 0  0014            STO     N5C5                                    80201970
01E8 0  0014            STO     N5C6                                    80201980
01E9 0  0014            STO     N5C7                                    80201990
01EA 0  C80F            LOD     N5C1                                    80202000
01EB 0  D811            STO     N5C6                                    80202010
01EC 0  C00D            LD      N5C1                                    80202020
01ED 0  C00F            LD      N5C6                                    80202030
01EE 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202040
```


DIMAL HEADER TEST (CARD)
TEST7

```
01F0 0  311F    W311F   DC      /311F   STD ODD ACC INCORRECT           80202050
01F1 0  70F4            MDX     A5C8    LOOP                            80202060
01F2 0  C008            LD      N5C7                                    80202070
01F3 0  F007            EOR     N5C3                                    80202080
01F4 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202090
01F6 0  3120    W3120   DC      /3120   STD ODD Q REG STORED            80202100
                *                       * INTO WRONG WORD               80202110
01F7 0  70EE            MDX     A5C8    LOOP                            80202120
                *                                                       80202130
01F8 0  7006            MOX     A600    EXIT                            80202140
                        ********************************************    80202150
01FA    0000            BSS  E  0                                       80202160
01FA 0  0000    N5C1    DC      /0000   CONSTANT                        80202170
01F8 0  FFFF    N5C3    DC      /FFFF   CONSTANT                        80202180
01FC 0  FFFF    N5C5    DC      /FFFF   STORAGE                         80202190
01FD 0  FFFF    N5C6    DC      /FFFF   STORAGE                         80202200
01FE 0  FFFF    N5C7    DC      /FFFF   STORAGE                         80202210
                        ********************************************    80202220
                *                                                       80202230
                *               TEST OF COMPARE OPERATION               80202240
                *                                                       80202250
                        ********************************************    80202260
01FF 0  C042    A600    LD      N8A2                                    80202270
0200 0  803F            CMP     N8A0    A GREATER THAN M                80202280
0201 0  F040            EOR     N8A2                                    80202290
0202 0  1000            SLA     0                                       80202300
0203 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202310
0205 0  3121    W3121   DC      /3121   A GREATER THAN M FAIL           80202320
0206 0  70F8            MDX     A600    LOOP                            80202330
                        ********************************************    80202340
0207 0  C038    88A1    LD      N8A0    N8A0 = 0000                     80202350
0208 0  8038            CMP     N8A1    N8A1 = 1000                     80202360
0209 0  7001            MDX     J8A2    A LESS THAN M FAILED            80202370
020A 0  F035            EOR     N8A0                                    80202380
020B 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202390
020D 0  3122    W3122   DC      /3122   A LESS THAN M FAILED            80202400
020E 0  70F8            MDX     88A1    LOOP                            80202410
                        ********************************************    80202420
020F 0  C030    88A2    LD      N8A0    N8A0 = 0000                     80202430
0210 0  8032            CMP     N8A3    N8A3 = 2000                     80202440
0211 0  7001            MOX     J8A4    A LESS THAN M FAILED            80202450
0212 0  F02D            EOR     N8A0                                    80202460
0213 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202470
0215 0  3123    W3123   DC      /3123   A LESS THAN M FAILED            80202480
0216 0  70F8            MDX     88A2    LOOP                            80202490
                        ********************************************    80202500
0217 0  C028    88A3    LD      N8A0    N8A0 = 0000                     80202510
0218 0  8029            CMP     N8A2    N8A2 = 4000                     80202520
0219 0  7001            MOX     J8A6    A LESS THAN M FAILED            80202530
021A 0  F025            EOR     N8A0                                    80202540
0218 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202550
021D 0  3124    W3124   DC      /3124   A LESS THAN M FAILED            80202560
021E 0  70F8            MDX     88A3    LOOP                            80202570
                        ********************************************    80202580
021F 0  C024    88A4    LD      N8A4                                    80202590
0220 0  801F            CMP     N8A0                                    80202600
022_ 0  7001            MDX     J8A8    A LESS THAN M FAILED            80202610
0222 0  F021            EOR     N8A4                                    80202620
0223 00 44000115        BSI  L  F000    A LESS THAN M FAILED            80202630
0225 0  3125    W3125   DC      /3125   A LESS THAN M FAILED            80202640
0226 0  70F8            MOX     88A4    LOOP                            80202650
                        ********************************************    80202660
0227 0  C019    88A5    LD      N8A1                                    80202670
0228 0  8018            CMP     N8A2                                    80202680
0229 0  7002            MOX     J8AA    A EQUAL M FAILED                80202690
022A 0  7001            MOX     J8AA    A EQUAL M FAILED                80202700
022B 0  F015            EOR     N8A1                                    80202710
022C 00 44000115        BSI  L  F000    CHECK ERR OR LOOP SW            80202720
```

DIMAL HEADER TEST (CARD)
TEST7

```
022E 0  3126        W3126 DC    /3126       A EQUAL M FAILED          80202730
022F 0  70F7              MDX   88A5        LOOP                      80202740
                    ********************************************      80202750
0230 00 74060011          MDX   L  /11,6    ADJUST READ IOCC TO       80202760
                    *                       READ COLD START LOADER    80202770
                    *                                                 80202780
0232 00 65004C00          LDX   L1 /4C00                              80202790
0234 00 6000000A          STX   L1 /A         MODIFY INSTRUCTION        80202800
0236 00 65000DAA          LDX   L1 /0DAA                              80202810
0238 00 60000010          STX   L1 /10        CHANGE READ AREA          80202820
023A 00 65000141          LDX   L1 321                                80202830
023C 00 6D000DAA          STX   L1 /0DAA      SET WORD COUNT            80202840
                    *                                                 80202850
023E 00 4C000001          BSC   L  /1         RETURN TO CS LOADER       80202860
                    ********************************************      80202870
0240 0  0000        N8A0  DC    /0000       CONSTANT                  80202880
0241 0  1000        N8A1  DC    /1000       CONSTANT                  80202890
0242 0  4000        N8A2  DC    /4000       CONSTANT                  80202900
0243 0  2000        N8A3  DC    /2000       CONSTANT                  80202910
0244 0  8000        N8A4  DC    /8000       CONSTANT                  80202920
                    ********************************************      80202930
0246    00EF              END   X  *-P1D    END CARD NOT USED  8020293 80202940
```


DIMAL HEADER TEST (CARD)
TEST7

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
A5C0	01C8	01C2,01CE,01D4
A5C4	01D5	01DF,01E5
A5C8	01E6	01F1,01F7
A580	01A2	019B,01A6,01A8
A584	01AC	0181,01B7
A588	0188	018C,01C1
A600	01FF	01F8,0206
A88A	0164	0169
A888	016A	0170
A88C	0171	0177
A88D	0178	0180
A88E	0181	0189
A88F	018A	0191
A888	0157	015C
A889	015D	0163
A890	0192	019A
88A1	0207	020E
88A2	020F	0216
88A3	0217	021E
88A4	021F	0226
88A5	0227	022F
CNTL	0107	
F000	0115	0159,0160,0166,016D,0174,017D,0186,018E,0197,01A3, 01A8,01AE,0184,0189,01BE,01C6,0101,010C,01E2,01EE, 01F4,0203,020B,0213,0218,0223,022C
J8AA	022C	0229,022A
J8A2	0208	0209
J8A4	0213	0211
J8A6	0218	0219
J8A8	0223	0221
N280	019C	015F,0171
N281	019D	0164,016C,0173,0178,0196
N282	019E	015D,016A,017C,0181,0185,0192
N283	019F	0194
N284	01A0	0157,018A,018C
N300	01A1	017A,0183
N5C1	01FA	01C8,01D5,01EA,01EC
N5C3	01F8	01D0,01D8,0108,01E1,01E6,01F3
N5C5	01FC	01C9,01CA,0106,01D9,01DA,01E7
N5C6	01FD	01CF,0197,01E0,01E8,01E8,01E0
N5C7	01FE	01E9,01F2
N581	01C4	01A2
N582	01C5	0188
N583	01C6	01AC
N584	01C7	01AD,0183
N8A0	0240	0200,0207,020A,020F,0212,0217,021A,0220
N8A1	0241	0208,0227,0228,0228
N8A2	0242	01FF,0201,0218
N8A3	0243	0210
N8A4	0244	021F,0222
PID	0156	0245
W310C	0158	310C
W310D	0162	310D
W310E	0168	310E
W310F	016F	310F
W311A	01C0	311A
W311B	01CD	311B
W311C	01D3	311C
W311D	01DE	311D
W311E	01E4	311E
W311F	01F0	311F
W3110	0176	3110
W3111	017F	3111
W3112	0186	3112
W3113	0190	3113

DIMAL HEADER TEST (CARD)
TEST7

W3114	0199	3114
W3115	01A5	3115
W3116	01AA	3116
W3117	0180	3117
W3118	0186	3118
W3119	0188	3119
W3120	01F6	3120
W3121	0205	3121
W3122	020D	3122
W3123	0215	3123
W3124	0210	3124
W3125	0225	3125
W3126	022E	3126

DIMAL COLD START LOADER (CARD)

```
                *                                                          80200010
                      ABS                                                  80200020
026C                  DRG     /3200                                        80200030
                *                                                          80200040
                *     COLD START LOADER PROGRAM WAITS DECRIPTION.           80200050
                *                                                          80200060
                *                                                          80200070
3200 0  00DC          DC      W3200+1   WAIT 200                           80200080
                *                                                          80200090
                *                       THE CE WORD WHICH DEFINES          80200100
                *                       THE DISK PACK AS THE CE            80200110
                *                       PACK WAS NOT FOUND.INSURE          80200120
                *                       THE CE/DIMAL PACK IS               80200130
                *                       LOADED ON THE CORRECT              80200140
                *                       DISK DRIVE. PRESS START            80200150
                *                       TO PROCEED.                        80200160
                *                                                          80200170
3201 0  00E6          DC      W3201+1   WAIT 201                           80200180
                *                                                          80200190
                *                       THE DIMAL WORD WHICH               80200200
                *                       DEFINES THE CE DISK PACK           80200210
                *                       AS CONTAINING DIMAL WAS            80200220
                *                       NOT FOUND.INSURE THE               80200230
                *                       PROPER DISK PACK IS LOADED         80200240
                *                       ON THE CORRECT DRIVE.              80200250
                *                       DEPRESS START BUTTON TO            80200260
                *                       PROCEED.                           80200270
                *                                                          80200280
3202 0  00E25         DC      W3202+1   WAIT 202                           80200290
                *                                                          80200300
                *                       THE HOME BIT DID NOT               80200310
                *                       COME ON AFTER 3 ATTEMPTS           80200320
                *                       TO SEEK HOME.THE DSW IS            80200330
                *                       IN THE A REG. CORRECT THE          80200340
                *                       FAILURE AND IF CORE WAS            80200350
                *                       NOT DESTURBED PRESS RESET          80200360
                *                       AND START.IF CORE WAS              80200370
                *                       DESTURBED,RELOAD THE COLD          80200380
                *                       START CALL.                        80200390
                *                                                          80200400
3203 0  00E33         DC      W3203+1   WAIT 203                           80200410
                *                                                          80200420
                *                       DISK DRIVE NOT READY.              80200430
                *                       MAKE DISK DRIVE READY.IF           80200440
                *                       THE DISK ARM WAS MOVED,            80200450
                *                       MANUALLY OR BY POWER OFF,          80200460
                *                       PRESS RESET AND START,             80200470
                *                       OTHERWISE JUST PRESS               80200480
                *                       START.                             80200490
                *                                                          80200500
3204 0  00E48         DC      W3204+1   WAIT 204                           80200510
                *                                                          80200520
                *                       SAME AS WAIT 203                   80200530
                *                                                          80200540
3205 0  00E64         DC      W3205     WAIT 205                           80200550
                *                                                          80200560
                *                       A DISK ERROR WAS DETECTED          80200570
                *                       ON EACH OF 3 ATTEMPTS TO           80200580
                *                       READ A SECTOR. THE ERROR           80200590
                *                       BITS ARE IN THE A REG.             80200600
                *                       PRESS START TO RETRY THE           80200610
                *                       READ. DEPRESS RESET AND            80200620
                *                       START FOR RESTART OPERA-           80200630
                *                       TION.                              80200640
                *                                                          80200650
3206 0  00E74         DC      W3206+1   WAIT 206                           80200660
                *                                                          80200670
                *                       THE WRONG SECTOR ID WAS            80200680
```

DIMAL COLD START LOADER (CARD)

```
                        *                                READ ON EACH OF 3 TRIES.      80200690
                        *                                THE G REG CONTAINS THE        80200700
                        *                                EXPECTED SECTOR,AND THE       80200710
                        *                                A REG THE ACTUAL SECTOR.      80200720
                        *                                PRESS START TO RETRY.         80200730
                        *                                PRESS RESET AND START FOR     80200740
                        *                                RESTART OPERATIONS.           80200750
                        *                                                              80200760
3207                            ORG     3500                                          80200770
0141                    IN      EQU     321                                           80200780
                        *                                                              80200790
                        *       DIMAL SYSTEM COLD START LOADER.                        80200800
                        *                                                              80200810
                        *       THIS LOADER IS USED TO INPUT THE DOM                   80200820
                        *       PROGRAM SPECIFIED BY THE COLD START                    80200830
                        *       CALL CARD OR THE INITIAL LOADER                        80200840
                        *                                                              80200850
0DAC 0  0200            PIO     DC      /0200                                         80200860
0DAD 0  70D8                    MDX     ST              SKIP OVER TABLE               80200870
                        *                                                              80200880
                        *       THE CYL TABLE WHICH FOLLOWS IS FILLED                  80200890
                        *       IN BY THE INITIAL LOADER DURING DISK                   80200900
                        *       GENERATION.                                            80200910
                        *                                                              80200920
0DAE 0  0000            CYLT8   DC      0               HEADER TEST CYLINDER          80200930
0DAF 0  0000                    DC      0               ODM LDR/DRG CYLINDER          80200940
0DB0 0  0000                    DC      0               ODM SEL/EXC CYLINDER          80200950
0DB1 0  00D0                    DC      0               WORK CYLINDER                 80200960
0DB2 0  0000                    DC      0               WORK CYLINDER                 80200970
0DB3 0  0000                    DC      0               LOC DIR - EDIT TBL            80200980
0DB4 0  0000                    DC      0               HIST TRACK ADDRESS            80200990
0DB5 0  0000                    DC      0               OUTPUT DEVICE                 80201000
                        *                                                             80201010
0DB6 0  C80F            ST      LDD     RST             GET RESTART INSTRUCTION       80201020
0DB7 00 DC0D0000                STD  L  0               SET IN LOCATIONS 0 AND 1      80201030
                        *                                                             80201040
                        *       THIS SECTION BUILDS THE DISK COMMANDS                 80201050
                        *                                                             80201060
0DB9 00 C400000D                LD   L  /D              GET AREA CODE                 80201070
0DBB 0  E00C                    AND     KF8             REMOVE INSTRUCTION            80201080
0DBC 0  D00C                    STD     AC              SAVE AREA CODE                80201090
0DBD 0  63F7                    LDX  3  -9              SET BUILD INDEX               80201100
0DBE 0  C00A            8LD     LD      AC              PICKUP AREA CODE              80201110
0DBF 00 EF000E84                OR   L3 DSN+10          ADD AC TO IOCC                80201120
0DC1 00 D7000E84                STO  L3 DSN+10          RETURN INSTRN                 80201130
0DC3 0  7302                    MDX  3  2               MODIFY XR-SKIP ON 0           80201140
0DC4 0  70F9                    MDX     8LD             CONTINUE BUILDING             80201150
0DC5 0  7004                    MDX     LD              GO INPUT ODM SECTION          80201160
                        *                                                             80201170
0DC6    0000                    BSS  E  0               ALIGN TO EVEN ADDRESS         80201180
0DC6 00 4C000DCA        RST     BSC  L  LD              RESTART INSTRUCTION           80201190
0DC8 0  F800            KF8     DC      /F800           HEX CONSTANT                  80201200
0DC9 0  0000            AC      DC      0               DISK DRIVE AREA CODE          80201210
                        *                                                             80201220
                        *       THIS SECTION CHECKS IF DISK IS CE PACK,               80201230
                        *       AND IF CE PACK CONTAINS DIMAL SYSTEM.                 80201240
                        *                                                             80201250
0DCA 0  404F            LD      BSI     SKHM            RETURN DISK TO HOME           80201260
0DCB 0  C0E8                    LD      CYLT8+6         PICKUP HIST TRK ADRS          80201270
0DCC 0  D012                    STO     LD2+2           SET IN CALL  SECT 0           80201280
0DCD 0  8018                    A       K3              SET FOR SECTOR 3              80201290
0DCE 0  D006                    STD     LD1+4           SET IN READ CALL              80201300
0DCF 0  1883                    SRT     3               POSITION SEEK COUNT           80201310
0DD0 0  D001                    STD     LD1+1           SET IN SEEK CALL              80201320
                        *                                                             80201330
0DD1 0  405B            LD1     BSI     SKDT            SEEK DISK CALL                80201340
0DD2 0  0000                    DC      0               NUMBER OF CYLINDERS           80201350
                        *                                                             80201360
```


DIMAL COLD START LOADER (CARD)

```
0DD3 0  406D                    BSI     ORD             READ DISK CALL                80201370
0DD4 0  0141                    DC      IN              INPUT AREA                    80201380
0DD5 0  0000                    DC      0               SECTOR TO READ                80201390
                        *                                                             80201400
0DD6 00 C4000143                LD   L  IN+2            PICKUP CE WORD POSTN          80201410
0DD8 0  F00E                    EOR     CEWD            CHECK IF CE WORD              80201420
0DD9 00 4C180D0D                BSC  L  LD2,+-          BRANCH IF CE WORD             80201430
0DDB 0  32C0            W3200   DC      /3200           CE WORD NOT READ              80201440
0DDC 0  70ED                    MDX     LD              REPEAT                        80201450
                        *                                                             80201460
0DDD 0  4063            LD2     BSI     DRD             READ DISK CALL                80201470
0DDE 0  0141                    DC      IN              INPUT AREA                    80201480
0DDF 0  0D00                    DC      0               SECTOR TO READ                80201490
                        *                                                             80201500
0DE0 00 C4000143                LD   L  IN+2            PICKUP DIMAL WD PSTN          80201510
0DE2 0  F005                    EOR     DMWD            CHECK IF DIMAL WORD           80201520
0DE3 00 4C180DEA                BSC  L  LD3,+-          BRANCH IF DIMAL WORD          80201530
0DE5 0  3201            W3201   DC      /3201           DIMAL WORD NOT READ           80201540
0DE6 0  70E3                    MDX     LD              REPEATE                       80201550
                        *                                                             80201560
0DE7 0  CEDC            CEWD    DC      /CEDC           CE WORD CONSTANT              80201570
0DE8 0  A8CD            DMWD    DC      /A8CD           DIMAL WORD CONSTANT           80201580
0DE9 0  0003            K3      DC      3               CONSTANT 3                    80201590
                        *                                                             80201600
                        *       THIS SECTION INPUTS THE DOM SECTION                   80201610
                        *       SPECIFIED BY THE CALLING SEQUENCE.                    80201620
                        *                                                             80201630
0DEA 0  402F            LD3     BSI     SKHM            RETURN DISK TO HOME           80201640
0DEB 00 C400000C                LD   L  /C              GET SECTION INDICATR          80201650
0DED 0  1801                    SRA     1               POSITION FOR 0 OR 1           80201660
0DEE 0  D001                    STO     LD4+1           SET IN LOAD XR COMND          80201670
0DEF 00 67000000        LD4     LDX  L3 0               SET XR TO SECT INDTR          80201680
0DF1 00 C7000DAF                LD   L3 CYLT8+1         GET PROPER ADDRESS            80201690
0DF3 0  0012                    STO     LD6+2           SET IN READ CALL              80201700
0DF4 0  1803                    SRA     3               POSITION SEEK COUNT           80201710
0DF5 0  D001                    STO     LD5+1           SET IN SEEK CALL              80201720
                        *                                                             80201730
0DF6 0  4036            LD5     BSI     SKDT            GO SEEK TO DESRD CYL          80201740
0DF7 0  0000                    DC      0               NUMBER OF SEEKS               80201750
                        *                                                             80201760
0DF8 0  6308                    LDX     3 8             SET UP NUMBR SECT RD          80201770
0DF9 0  661F                    STX     3 SCT           SET IN SECTOR COUNTR          80201780
0DFA 00 65000147                LDX  L1 327             SET UP DRG ADDRESS            80201790
0DFC 00 C400000C                LD   L  /C              PICKUP SECTION IND            80201800
0DFE 0  1801                    SRA     1               SET FOR 0 OR 1                80201810
0DFF 0  4820                    BSC     Z               SKIP IF LDR/DRG SECT          80201820
0E00 0  6145                    LDX     1 /45           MOD ADRS FOR SEL/EXC          80201830
0E01 0  6913                    STX     1 L07A+1        SET ADRS IN XFER INS          80201840
0E02 0  71FF                    MDX     1 -1            ADJ XR TO INPUT AREA          80201850
0E03 0  6901                    STX     1 LD6+1         SET IN READ CALL              80201860
                        *                                                             80201870
0E04 0  403C            LD6     BSI     ORD             READ DISK CALL                80201880
0E05 0  0000                    DC      0               INPUT AREA ADDRESS            80201890
0E06 0  0000                    DC      0               SECTOR TO READ                80201900
                        *       THE FOLLOWING ROUTINE REPOSITIONS THE                 80201910
                        *       INPUTTED PROGRAM TO ITS ORG ADDRESSES.                80201920
0E07 00 67000140        LD7     LDX  L3 320             SET XR = DATA WRD CT          80201930
0E09 0  C102                    LD   1 2                PICKUP DATA WORD              80201940
0E0A 0  D100                    STD  I 0                SET IN PROPER LOCATN          80201950
0E0B 0  7101                    MDX  I 1                INCREMENT INPUT XR            80201960
0E0C 00 74010E05                MDX  L  LD6+1,1         UPDATE RD CALL ADDRS          80201970
0E0E 0  73FF                    MDX  3 -1               SKIP WHEN ALL WD MVD          80201980
0E0F 0  70F9                    MDX     LD7+2           GO MOVE NEXT WORD             80201990
0E10 00 74FF0E19                MDX  L  SCT,-1          SKIP WHEN LAST SECTR          80202000
0E12 0  7003                    MDX     LD8             MOD FOR NEXT SECTOR           80202010
                        *                                                             80202020
0E13 0  4006            LD8     BSI     SKHM            RETURN DISK TO HOME           80202030
0E14 00 4C000000        L07A    BSC  L  0               BRANCH TO PROGRAM             80202040
```

```
                        *                                                       80202050
0E16 00 74010E06    LD8 MDX  L  LD8+2,1     UPDATE READ CALL                    80202060
0E18 0  70EB            MDX     L06         GO READ NEXT SECTOR                 80202070
                        *                                                       80202080
0E19 0  0000        SCT DC      0           SECTOR COUNT                        80202090
                        *                                                       80202100
                        *   THIS ROUTINE SEEKS THE 2310 TO ITS                  80202110
                        *   HOME POSITION.                                      80202120
                        *                                                       80202130
0E1A 0  0000        SKHM OC     0           ENTRY POINT                         80202140
0E1B 0  6304             LDX    3 4         SET TRY INDEX                       80202150
0E1C 0  065F        SKHM1 XIO   DSNR        SENSE/RESET STATUS                  80202160
0E1D 0  D00E            STO     SKST        SAVE STATUS                         80202170
0E1E 0  1004            SLA     4           POSITION HOME BIT                   80202180
0E1F 0C 4CA80E1A        BSC  I  SKHM,+Z     EXIT IF DISK HOME                   80202190
0E21 0  73FF            MDX   3 -1          SKIP IF 3RD TRY                     80202200
0E22 0  7003            MDX     SKHM2       GO ISSUE SEEK CMND                  80202210
0E23 0  C008            LO      SKST        RETRIEVE LAST DSW                   80202220
0E24 0  3202        W3202 DC    /3202       DISK NOT HOME                       80202230
0E25 0  70F5            MDX     SKHM+1      TRY AGAIN                           80202240
0E26 0  0857        SKHM2 XIO   HOME        SEEK TO HOME                        80202250
0E27 0  0852            XIO     DSN         SENSE DISK STATUS                   80202260
0E28 0  1001            SLA     1           POSITION OP CP BIT                  80202270
0E29 0C 4C100F27        BSC  L  SKHM2+1,-   BRANCH IF NOT OP CP                 80202280
0E2B 0  70F0            MDX     SKHM1       GO CHECK HOME BIT                   80202290
                        *                                                       80202300
0E2C 0  0000        SKST DC     0           SEEK DSW SAVE LOC.                  80202310
                        *                                                       80202320
                        *   THIS ROUTINE SEEKS THE DISK OUT TO THE              80202330
                        *   DESIRED CYLINDER                                    80202340
                        *                                                       80202350
0E2D 0  0000        SKOT DC     0           ENTRY POINT                         80202360
0E2E 0  084D            XIO     DSNR        SENSE DISK STATUS                   80202370
0E2F 0  1002            SLA     2           POSITION READY BIT                  80202380
0E30 0C 4C100E34        BSC  L  SKOT1,-     BRANCH IF READY                     80202390
0E32 0  3203        W3203 DC    /3203       DISK NOT READY-SEEK                 80202400
0E33 0  70FA            MDX     SKOT+1      CHECK AGAIN                         80202410
0E34 00 C4800E2D    SKOT1 LD    I  SKOT     PICK UP SEEK COUNT                  80202420
0E36 0  D049            STO     SEEK        PLACE IN SEEK CMND                  80202430
0E37 0  0848            XIO     SEEK        ISSUE SEEK                          80202440
0E38 0  0841        SKOT2 XIO   DSN         SENSE DISK STATUS                   80202450
0E39 0  1001            SLA     1           POSITION OP CP BIT                  80202460
0E3A 00 4C100E38        BSC  L  SKOT2,-     BRANCH IF NOT OP CP                 80202470
0E3C 0  083F            XIO     DSNR        SENSE/RESET DSW                     80202480
0E3D 00 74010E2D        MDX  L  SKOT,1      MODIFY RETURN                       80202490
0E3F 00 4C800E2D        BSC  I  SKOT        RETURN TO USER                      80202500
                        *                                                       80202510
                        *   THIS ROUTINE READS THE DESIRED SECTOR               80202520
                        *   AND CHECKS FOR PROPER SECTOR ID                     80202530
                        *                                                       80202540
0E41 0  0000        DRD DC      0           ENTRY POINT                         80202550
0E42 0  6303            LDX    3 3          SET TRY INDEX                       80202560
0E43 0  0838            XIO     DSNR        SENSE DISK STATUS                   80202570
0E44 0  1002            SLA     2           POSITION READY BIT                  80202580
0E45 00 4C100E49        BSC  L  ORD1,-      BRANCH IF READY                     80202590
0E47 0  3204        W3204 DC    /3204       DISK NOT READY - READ               80202600
0E48 0  70F9            MDX     DRD+1       TRY AGAIN                           80202610
0E49 00 C4800E41    DRD1 LD     I  DRD      PICKUP INPUT ADDRESS                80202620
0E4B 0  D036            STO     READ        SET IN READ IOCC                    80202630
0E4C 0  D002            STO     *+2         SET IN STORE INSTR                  80202640
0E4D 0  C02A            LD      SC          PICKUP SCN CTL + WD CT              80202650
0E4E 00 D4000000        STO  L  0           SET IN INPUT AREA                   80202660
0E50 00 74010E41        MDX  L  DRD,1       MODIFY ENTRY POINT                  80202670
0E52 00 C4800E41        LD   I  DRD         PICK UP SECTOR ADDRS                80202680
0E54 0  1883            SRT     3           SAVE SECTOR BITS                    80202690
0E55 0  C02B            LD      READ+1      PICKUP READ COMMAND                 80202700
0E56 0  1803            SRA     3           REMOVE OLD SECTOR BT                80202710
0E57 0  1083            SLT     3           ADD NEW SECTOR BITS                 80202720
```



```
0E5B 0  D02A            STO     READ+1      UPDATE READ IOCC                    80202730
0E59 0  0828        DRD2 XIO    READ        ISSUE READ COMMAND                  80202740
0E5A 0  081F            XIO     DSN         SENSE DISK STATUS                   80202750
0E5B 0  1001            SLA     1           POSITION OP CP BIT                  80202760
0E5C 00 4C100E5A        BSC  L  DRD2+1,-    BRANCH IF NOT OP CP                 80202770
0E5E 0  081D            XIO     DSNR        SENSE/RESET DSW                     80202780
0E5F 0  E01C            AND     DSNR        CHECK FOR ERROR BITS                80202790
0E60 00 4C180E66        BSC  L  DRD3,+-     BRANCH IF NO ERRORS                 80202800
0E62 0  73FF            MDX   3 -1          SKIP IF 3RD TRY                     80202810
0E63 0  70F5            MDX     DRD2        TRY AGAIN                           80202820
0E64 0  3205        W3205 DC    /3205       DISK READ ERROR                     80202830
0E65 0  700E            MDX     DRD4        EXIT                                80202840
0E66 00 6660E82     DRD3 LOX    I2 READ     SET XR = INPUT AREA                 80202850
0E66 00 C4800E41         LD     I  DRD      PICKUP SECTOR ADDRS                 80202860
0E6A 0  F201             EOR    2 1         CHECK AGAINST ACT ID                80202870
0E68 0  4818             BSC    +-          SKIP IF WRONG SID                   80202880
0E6C 0  7007             MDX    DRD4        EXIT                                80202890
0E6D 0  73FF             MDX  3 -1          SKIP IF 3RD ERROR                   80202900
0E6E 0  70EA             MDX    DRD2        RETRY THE READ                      80202910
0E6F 00 C4800E41         LD     I  DRD      SET EXPECTED SECTOR                 80202920
0E71 0  1690             SRT    16          *1D IN Q REG                        80202930
0E72 0  C201             LD     2 1         ACTUAL SECTOR TO A                  80202940
0E73 0  3206        W3206 DC    /3206       WRONG SECTOR READ                   80202950
0E74 00 74010E41    DRD4 MDX    L  DRD,1    MODIFY ENTRY POINT                  80202960
0E76 00 4CB00E41         BSC    I  ORG      RETURN TO USER                      80202970
                         *                                                      80202980
0E78 0  0141        SC   DC         321     SCAN CTL AND WRD CNT                80202990
                         *                                                      80203000
                         *   THE FOLLOWING WORDS ARE THE DISK IOCC'S            80203010
                         *                                                      80203020
0E7A    0000             BSS    E  0        ALLIGN TO EVEN ADDRS                80203030
                         *                                                      80203040
0E7A 0  0000        DSN  OC     0           DISK SENSE IOCC                     80203050
0E78 0  0700             DC     /0700       DISK SNS/RESET IOCC                 80203060
0E7C 0  8740        DSNR DC     /8740       SEEK HOME IOCC                      80203070
0E7D 0  0701             DC     /0701       SEEK OUT IOCC                       80203080
0E7E 0  00CA        HOME DC     202         READ DISK IOCC                      80203090
0E7F 0  0404             DC     /0404       DISK SENSE IOCC                     80203100
0E80 0  0000        SEEK DC     0           DISK SNS/RESET IOCC                 80203110
0E81 0  0400             DC     /0400       SEEK HOME IOCC                      80203120
0E82 0  0090        READ DC     0           SEEK OUT IOCC                       80203130
0E83 0  0600             DC     /0600       READ DISK IOCC                      80203140
                         *                                                      80203150
0E84    0DAD             END    PIO+1                          8020315 80203160
```

DIMAL COLD START LOADER (CARD)

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
AC	0DC9	0D8C,0DBE
BLD	0D8E	0DC4
CEWD	0DE7	0DD8
CYLT8	0DAE	0DC8,0DF1
DMWD	0DE8	0DE2
DRD	0E41	0DD3,0DDD,0E04,0E48,0E49,0E50,0E52,0E68,0E6F,0E74, 0E76
DRD1	0E49	0E45
DRD2	0E59	0E5C,0E63,0E6E
DRD3	0E66	0E60
DRD4	0E74	0E65,0E6C
DSN	0E7A	0DBF,0DC1,0F27,0E38,0E5A
DSNR	0E7C	0E1C,0E2E,0E3C,0E43,0E5E,0E5F
HOME	0E7F	0F26
IN	0141	0DD4,0DD6,0DDE,0DE0
KF8	0DC8	0D88
K3	0DE9	0DCD
LD	0DCA	0DC5,0DC6,0DDC,0DE6
LD1	0DD1	0DCE,0DD0
LD2	0DDD	0DCC,0DD9
LD3	0DEA	0DF3
LD4	0DEF	0DEE
LD5	0DF6	0DF5
LD6	0E04	0DF3,0F03,0E0C,0E16,0E18
LD7	0E07	0E0F
LD7A	0F14	0E01
LD8	0E16	0E12
P1D	0DAC	0E84
READ	0E82	0E48,0E55,0E58,0E59,0E66
RST	0DC6	0DB6
SC	0E78	0E4D
SCT	0F19	0DF9,0E10
SEEK	0E80	0E36,0E37
SKHM	0E1A	0DCA,0DFA,0E13,0E1F,0E25
SKHM1	0E1C	0E28
SKHM2	0E26	0E22,0E29
SKOT	0E2D	0DD1,0DF6,0E33,0E34,0E3D,0E3F
SKOT1	0E34	0E30
SKOT2	0E38	0E3A
SKST	0E2C	0E1D,0E23
ST	0DB6	0DAD
W3200	0DDB	320D
W3201	0DE5	3201
W3202	0E24	3202
W3203	0E32	3203
W3204	0E47	3204
W3205	0E64	3205
W3206	0E73	3206

DIMAL LOADER/ORGANIZOR SECTION (CARD)

```
                        ABS                                          80200010
028C                    ORG     /3300                                80200020
                *                                                    80200030
                *   DIMAL LOADER/ORGANIZOR SECTION PROGRAM            80200040
                *   WAITS DESCRIPTION.                               80200050
                *                                                    80200060
3300 0  0193            DC      W3300+1     WAIT 300                 80200070
                *                                                    80200080
                *                           SELECT PROGRAM OPTION    80200090
                *                           IN SENSE/PROGRAM SWS     80200100
                *                           AS FOLLOWS.              80200110
                *                                                    80200120
                *                           SW0  ADD PROGRAM         80200130
                *                           SW1  DELETE PROGRAM      80200140
                *                           SW2  CHANGE EDIT         80200150
                *                           SW3  LIST LOG.DIRECTORY  80200160
                *                           SW4  LIST EDIT TABLE     80200170
                *                           SW5  PUNCH COLD START CDS 80200180
                *                           SW6  LIST DE SWITCH COLD 80200190
                *                                START CALL SEEK CNT 80200200
                *                                                    80200210
                *                           ONLY 1 OPTION AT A TIME  80200220
                *                           MAY BE PERFORMED.SWITCHES 80200230
                *                           HAVE PRIORITY STARTING   80200240
                *                           AT SWITCH 0.             80200250
                *                                                    80200260
3301 0  020F            DC      W3301+1     WAIT 301                 80200270
                *                                                    80200280
                *                           A LAST CARD SEQUENCE     80200290
                *                           HAS BEEN PERFORMED       80200300
                *                           DURING DISK PACK GENE-   80200310
                *                           RATION OR DURING THE     80200320
                *                           ADD PROGRAM OPTION.IF    80200330
                *                           ALL PROGRAM DECKS HAVE   80200340
                *                           BEEN LOADED,SET D.E.     80200350
                *                           SWITCHES TO FF00 AND     80200360
                *                           PRESS START. IF MORE     80200370
                *                           PROGRAM ARE TO BE        80200380
                *                           LOADED,READY THE 1442    80200390
                *                           WITH THOSE PROGRAMS      80200400
                *                           AND PRESS START.         80200410
                *                                                    80200420
3302 0  036A            DC      W3302+1     WAIT 302                 80200430
                *                                                    80200440
                *                           2310 DISK DRIVE NOT      80200450
                *                           READY. READY THE 2310    80200460
                *                           AND PRESS START.IF DISK  80200470
                *                           ARM WAS MOVED,PERFORM    80200480
                *                           THE RESTART PROCEDURE.   80200490
                *                                                    80200500
3303 0  0377            DC      W3303+1     WAIT 303                 80200510
                *                                                    80200520
                *                           DSW DOES NOT INDICATE    80200530
                *                           HOME AFTER 3 TRIES TO    80200540
                *                           SEEK HOME.DSW IS IN      80200550
                *                           THE A REG.               80200560
                *                                                    80200570
3304 0  042E            DC      W3304+1     WAIT 304                 80200580
                *                                                    80200590
                *                           A DISK READ,WRITE OR     80200600
                *                           MODULO 4 CHECK ERROR     80200610
                *                           HAS OCCURED.THE MESSAGE  80200620
                *                           PRECEEDING THIS WAIT     80200630
                *                           DEFINES THE ERROR.       80200640
                *                           RELOAD THE PROGRAM       80200650
                *                           WHICH WAS READING IN AT  80200660
                *                           THE TIME OF THE ERROR    80200670
                *                           AND CONTINUE.            80200680
```

```
3305 0  048C          DC      W3305+1   WAIT 305                                  80200690
                                                                                  80200700
                                        1442 NOT READY.READY                      80200710
                                        THE 1442 AND CONTINUE                     80200720
                                                                                  80200730
3306 0  04C1          DC      W3306+1   WAIT 306                                  80200740
                                                                                  80200750
                                        1442 ERROR OSW IS IN                      80200760
                                        A REG. NPRO THE 1442.                     80200770
                                        RELOAD THE CARDS                          80200780
                                        EJECTED BY THE NPRO                       80200790
                                        AND CONTINUE.IF ERRORS                    80200800
                                        CONTINUE.PERFORM THE                      80200810
                                        RESTART PROCEDURE.                        80200820
                                                                                  80200830
                                                                                  80200840
3307 0  0567          DC      W3307+1   WAIT 307                                  80200850
                                                                                  80200860
                                        AN EDIT CARD ERROR HAS                    80200870
                                        BEEN DETECTED.EITHER                      80200880
                                        THE EDIT CARDS DO NOT                     80200890
                                        BLONG TO THE PROGRAM                      80200900
                                        JUST WRITTEN ON DISK,                     80200910
                                        OR THEY ARE OUT OF                        80200920
                                        SEQUENCE.VERIFY THE                       80200930
                                        CORRECTNESS OF THE EDIT                   80200940
                                        CARDS AND RELOAD THEM                     80200950
                                        IN THE 1442.CONTINUE                      80200960
                                        BY PRESSING 1800 START                    80200970
                                        BUTTON.IF IT IS DESIRED                   80200980
                                        THE EDIT CARDS MAY BE                     80200990
                                        ENTERED UPON COMPLETION                   80201000
                                        OF DISK GENERATION BY                     80201010
                                        USING THE CHANGE EDIT                     80201020
                                        OPTION.                                   80201030
                                                                                  80201040
3308 0  06D9          DC      W3308+1   WAIT 308                                  80201050
                                                                                  80201060
                                        READY THE 1442 WITH                       80201070
                                        AT LEAST 8 BLANK CARDS                    80201080
                                        AND DEPRESS 1800 START                    80201090
                                        BUTTON. THE CARDS WHICH                   80201100
                                        WILL BE PUNCHED ARE THE                   80201110
                                        COLD START CALL CARDS.                    80201120
                                                                                  80201130
3309 0  06F2          DC      W3309+1   WAIT 309                                  80201140
                                                                                  80201150
                                        ENTER THE PID OF THE                      80201160
                                        PROGRAM TO BE DELETED                     80201170
                                        IN DATA ENTRY SWITCHES                    80201180
                                        8 TROUGH 15 AND PRESS                     80201190
                                        START.                                    80201200
                                                                                  80201210
330A 0  0735          DC      W330A+1   WAIT 30A                                  80201220
                                                                                  80201230
                                        READY THE 1442 WITH                       80201240
                                        THE EDIT CARDS CONTAIN-                   80201250
                                        ING THE NEW EDIT DATA                     80201260
                                        INSURE THAT A COMPLETE                    80201270
                                        SET OF EDIT CARDS IS                      80201280
                                        ENTERED FOR THE PROGRAM                   80201290
                                        BEING CHANGED. DEPRESS                    80201300
                                        START TO CONTINUE.                        80201310
                                                                                  80201320
330B 0  0745          DC      W3308+1   WAIT 308                                  80201330
                                                                                  80201340
                                        CHANGE EDIT OPTION                        80201350
                                        HAS BEEN SELECTED.THE                     80201360
```



```
                                        CARD JUST READ WAS NOT                    80201370
                                        AN EDIT CARD.CORRECT                      80201380
                                        THE CARD IN ERROR AND                     80201390
                                        RELOAD IT.PRESS START                     80201400
                                        TO CONTINUE.                              80201410
                                                                                  80201420
330C 0  07A0          DC      W330C+1   WAIT 30C                                  80201430
                                                                                  80201440
                                        A CHECKSUM ERROR HAS                      80201450
                                        BEEN DETECTED DURING                      80201460
                                        CARD INPUT.REFER TO                       80201470
                                        DIMAL DOCUMENTATION,                      80201480
                                        SECTION 4.4(ERROR                         80201490
                                        MESSAGES),MESSAGE                         80201500
                                        E007 DESCRIPTION FOR                      80201510
                                        CORRECTIVE PROCEDURES.                    80201520
                                                                                  80201530
330D 0  07CD          DC      W330D+1   WAIT 30D                                  80201540
                                                                                  80201550
                                        1443 NOT READY.READY                      80201560
                                        AND CONTINUE.                             80201570
                                                                                  80201580
330E 0  07CE          DC      W330E     WAIT 30E                                  80201590
                                                                                  80201600
                                        1443 BUSY. AN ERROR                       80201610
                                        CONDITION.SHOULD NOT                      80201620
                                        NORMALLY OCCUR.CORRECT                    80201630
                                        AND CONTINUE.                             80201640
                                                                                  80201650
330F 0  07E5          DC      W330F     WAIT 30F                                  80201660
                                                                                  80201670
                                        1053/1816 NOT READY.                      80201680
                                        READY OUTPUT DEVICE                       80201690
                                        AND CONTINUE.                             80201700
                                                                                  80201710
3310                  ORG     326                                                 80201720
                                                                                  80201730
0004    DUT   EQU     4                                                           80201740
0AA8    IN    EQU     2731                                                        80201750
0AF8    DRT8L EQU     2811                                                        80201760
0C3C    EDT8L EQU     3132                                                        80201770
0F87    HIST  EQU     3975                                                        80201780
                                                                                  80201790
        DDM LOADER / ORGANIZER PROGRAM SECTION                                    80201800
                                                                                  80201810
        THE DDM LDR/ORG SECTION IS USED TO                                        80201820
        PERFORM THE FOLLOWING FUNCTIONS                                           80201830
                                                                                  80201840
        1. INPUT DFT'S AND PLACE THEM ON THE                                      80201850
           CE DISK PACK.                                                          80201860
        2. INPUT EDIT INFORMATION AND PLACE                                       80201870
           IT IN THE EDIT TABLE.                                                  80201880
        3. ADD PROGRAMS TO AN EXISTING DIMAL                                      80201890
           PACK.                                                                  80201900
        4. DELETE PROGRAMS FROM AN EXISTING                                       80201910
           PACK.                                                                  80201920
        5. CHANGE EDIT INFORMATION ON AN                                          80201930
           EXISTING DIMAL PACK.                                                   80201940
        6. LIST THE LOCATION OF ALL DFTS ON                                       80201950
           THE DIMAL PACK.                                                        80201960
        7. LIST THE CONTENTS OF THE EDIT TABLE.                                   80201970
        8. PUNCH COLD START CALL ROUTINES                                         80201980
        9. LIST BIT SW. ENTRY COLD START CALL                                     80201990
           SEEK COUNT.                                                            80202000
                                                                                  80202010
0146 0  0200  PID     DC      /0200     DDM PID                                   80202020
0147 0  7013          MDX     START     SKIP OVER USE TABLE                       80202030
                                                                                  80202040
```

```
                        *     TABLE CYTBL IS FILLED IN BY THE INITIAL      8D2D2D50
                        *     LOADER BEFDRE THIS PROGRAM IS WRITTEN        8D20206D
                        *     DN THE DISK.                                 8D2D2D7D
                        *                                                  8D2D2080
0148 0  0000    CYTBL DC      0          HDR TST/CLD SRT LDR               8D2D2D9D
0149 0  0000          DC      0          ODM LDR/DRG CYLINDER              80202100
014A D  0000          DC      D          DDM SEL/EXC CYLINDER              8D20211D
014B 0  0000          DC      D          WORK CYLINDER                     8D2D212D
014C 0  0000          DC      0          WORK CYLINDER                     80202130
014D 0  0000          DC      0          LDC DIR-EDIT TBL CYL              8D202140
014E D  0000          DC      D          HIST TRACK ADDRESS                80202150
014F 0  000D          DC      D          DUTPUT DEVICE                     80202160
0150    000D          BSS  E  0          ALIGN TU EVEN ADDRS               8D2D2170
0150 D0 4C000152 RSTRT BSC  L  RESRT     RESTART INSTRUCTION               8D2D218D
                        *                                                  8D2D2190
                        *     RESTART INSTRUCTIONS                         8D2D22DD
                        *                                                  8D2D221D
0152 0  086D    RESRT X1D     SNSW       SENSE SENSE/PRDGRAM SW            8D2D222D
0153 0  18D9          SRA     9          POSITION USABLE BITS              8D20223D
0154 DD 4C1807A5      BSC  L  RST,+-     PACK GENERATION BRANCH            8D2D224D
0156 D  6301          LDX   3 1          SET XR = 1                        8D2D225D
0157 00 6F00000C      STX  L3 /C         SET CALL INDICATOR                8D20226D
0159 00 4C000168      BSC  L  RST1       DISK MOD RESTART                  80202270
                        *                                                  8D2D2280
015B 0  630D    START LOX   3 13         SET IOCC BUILD XR                 8D2D2290
015C 00 C40000DD      LD   L  /D         PICK UP AREA CODE                 8D2D23DD
015E 0  E061          AND     SNSW       REMOVE UNWANTED BITS              8D2D231D
015F 00 EF00040A      DR   L3 DSN        ADD AREA CODE TO IOC              8D2D232D
0161 00 D700040A      STO  L3 DSN        RESTORE IOCC                      80202330
0163 0  73FE          MDX   3 -2         SKIP WHEN DONE                    8D2D234D
0164 0  70F7          MDX     START+1    BUILD NEXT IOCC                   8D2D2350
0165 D  C85A          LDD     RSTRT      GET RESTART INSTRN                8D2D236D
0166 00 DC000000      STD  L  D          SET IN LOCS 0 AND 1               8D202370
0168 00 44000360 RST1 BSI  L  DRDY       CK DISK READY                     8D2D238D
016A 00 4400036B      BSI  L  SKHM       RETURN DISK TO HOME               8D2D239D
016C D  C0E1          LD      CYTBL+6    PICKUP HST TRK ADDRS              8D2D240D
016D 0  D00A          STD     LD2A+4     SET IN READ COMMAND               8D2D2410
016E 0  D017          STD     LD2B+4     SET IN READ COMMAND               80202420
016F 0  1803          SRA     3          POSITION SEEK COUNT               8D20243D
0170 0  0D02          STO     LD2+2      SET IN SEEK CALL                  8D2D244D
0171 DD 44000381 LD2  BSI  L  SKOT       SEEK DISK CALL                    8D2D245D
0173 D  000D          DC      0          SEEK COUNT                        8D2D246D
0174 00 44000393 LD2A BSI  L  ORD        READ DISK CALL                    80202470
0176 D  0D78          DC      12D        WORD COUNT                        8D2D248D
0177 0  0F87          DC      HIST       INPUT AREA ADDRESS                8D2D2490
0178 0  0000          DC      D          SECTOR ADDRESS                    8D2D25DD
0179 00 C4000F8A      LD   L  HIST+3     PICKUP LAST USD CYL               8D2D251D
017B 00 D4000258      STO  L  CYIND      SET IN USE SECT IND               8D2D2520
017D 0  E044          AND     KFFF8      REMOVE SECTOR BITS                8D2D2530
017E 00 D400D524      STO  L  NXTCY      SET IN CYL INDICATOR              8D2D2540
0180 00 74030186      MDX  L  L02B+4,3   SET READ FOR SECT 3               8D2D255D
0182 00 44000393 LD2B BSI  L  DRD        READ DISK CALL                    8D2D256D
0184 0  0D78          DC      12D        WORD COUNT                        8D2D257D
0185 0  0F87          DC      HIST       INPUT AREA ADDRESS                8D2D2580
0186 0  0000          DC      D          SECTOR ADDRESS                    8D2D259D
0187 DD 44DD0368      BSI  L  SKHM       RETURN DISK TO HOME               8D2D26DD
                        *                                                  8D2D261D
                        *     DETERMINE IF INITIAL LOADER OR COLD          8D2D2620
                        *     START CALL.                                  8D2D2630
                        *                                                  8D2D2640
0189 00 C40DD00C LOI  LD   L  /C         PICKUP SECTION IND                8D2D265D
018B 00 4C18DIC3      BSC  L  LD3,+-     BRANCH IF INIT LDR C              8D2D266D
018D 00 44000508      BSI  L  TBLIN      INPUT LDC OR,EDIT TABLE           80202670
                        *                                                  8D2D2680
018F 00 44000768 LOIA BSI  L  LDG        PRINT SELECT OPTION               8D2D269D
0191 0  DA93          DC      MSGID      MESSAGE ADDRESS                   80202700
0192 0  3300    W330D DC      /330D      SELECT OPTION WAIT                80202710
                        *                                                  8D2D272D
```



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0193 0  D82C          XIO     SNSW       READ SENSE/PRDG SWS               8D2D273D
0194 DD 4C2801F4      BSC  L  LD4,+Z     BRANCH IF ADD PROG                80202740
0196 D  1001          SLA     1          PDSITION DELETE BIT               80202750
0197 00 4C2801AD      BSC  L  DLETE,+Z   BRANCH IF DELETE PGM              8D2D2760
0199 D  1001          SLA     1          PDSITION CHNG EDIT                80202770
019A 00 4C28018D      BSC  L  CHEO,+Z    BRANCH IF CHANGE EDT              8D2D2780
019C D  1001          SLA     1          PDSITION LIST LDC DR              80202790
019D DO 4C2801B3      BSC  L  LLD,+Z     BRANCH IF LIST LC DR              80202800
019F D  1001          SLA     1          POSITION LIST EDIT                8D20281D
01A0 00 4C2801B6      BSC  L  LEO,+Z     BRANCH IF LIST EDIT               8D202820
01A2 D  1001          SLA     1          PDSITION PUNCH CALL               8D202830
01A3 DO 4C2801B9      BSC  L  PCD,+Z     BRANCH IF PUNCH CALL              8D202840
01A5 0  1001          SLA     1          PDSITION LIST SK CNT              8D20285D
01A6 DD 4C2801BC      BSC  L  LCC,+Z     BRANCH IF LIST SK CT              8D20286D
01A8 00 44000360 DDNE BSI  L  DRDY       CHECK DISK READY                  8D2D287D
01AA 00 44000368      BSI  L  SKHM       RETURN ARM TO HOME                8D20288D
01AC 0  70E2          MDX     LD1A       GO TO DPTION WAIT                 8D2D2890
                        *                                                  8D2D290D
01AD DD 440DD6E0 DLETE BSI  L  DLPGM     GO DELETE PRDGRAM                 8D2D291D
01AF 0  7DF3          MDX     DDNE       COMPLETED                         8D2D292D
                        *                                                  80202930
01B0 00 4400073D      BSI  L  CHGED      GO CHANGE EDIT                    8D2D2940
01B2 0  70F5          MDX     OUNE       COMPLETED                         8D2D295D
                        *                                                  80202960
01B3 DD 4400062D LLD  BSI  L  DRLST      GO LIST DIRECTORY                 8D2D2970
01B5 0  70F2          MDX     OONE       COMPLETED                         8D2D298D
                        *                                                  8D2D2990
01B6 DO 44D0D67B LED  BSI  L  EDLST      GO LIST EDIT TABLE                8D2D30D0
01B8 0  7DEF          MDX     DONE       COMPLETED                         8D2D3D1D
                        *                                                  8D2D302D
01B9 DD 44000604 PCD  BSI  L  PCSC       GO PUNCH CALL CARDS               8D2D3030
01BB 0  7DEC          MDX     DDNE       COMPLETED                         80203040
                        *                                                  8D2D305D
01BC 0D 44D00418 LCC  BSI  L  LCSC       GO LIST SEEK COUNT                8D203060
01BE 0  7DE9          MDX     DDNE                                         8D203D70
01CD    DDDD          BSS  E  D                                            8D203080
01CD 0  F8D0    SNSW  DC      /F8DD      CONSTANT LOCATIUN                 8D2D3090
01C1 0  0760          DC      /D760      SENSE SNS/PROG SWS                8D2D310D
01C2 0  FFF8    KFFF8 DC      /FFF8      CONSTANT HEX FFF8                 8D20311D
                        *                                                  8D2G3120
                        *     ENTER LO3 IF INITIAL LUADER CALL.            8D2D3130
                        *                                                  8D2D3140
01C3 0C C4000524 LO3  LD   L  NXTCY      PICKUP CYL IND                    8D2D3150
01C5 DO 04000523      STD  L  LSTCY      SET IN LAST USED IND              8D2D316D
01C7 0C 440004FD      BSI  L  CYCK       GO CHECK NEXT CYL.                8D2D317D
01C9 00 C4000524      LO   L  NXTCY      PICKUP NEXT CYL                   80203180
01CB DD 04000258      STO  L  CYIND      SAVE FOR WORK USE                 8D203190
                        *                                                  8D2D3200
                        *     GENERATE LOCATION DIRECTORY                  8D2D3210
                        *                                                  80203220
01CD DO C4D0D148      LO   L  CYTBL      PICKUP DDM HDR CYL                8D203230
01CF 0  D016          STO     LCCN+2     SET IN LOC CONSTANTS              8D203240
01D0 D  8012          A       K7         UPDATE SECTOR ID                  80203250
01D1 D  D018          STO     LCCN+6     SAVE AS CS LDR CYL                80203260
01D2 DD C4D0D149      LD   L  CYT8L+1    PICKUP LDR/DRG CYL                80203270
01D4 D  DD19          STO     LCCN+10    SET IN LDC CONSTANTS              80203280
01D5 0D C4D0D14A      LO   L  CYTBL+2    PICKUP SEL/EXC CYL                8D203290
01D7 D  001A          STO     LCCN+14    SET IN LDC CONSTANTS              80203300
01D8 D  63FD          LOX   3 -16        SET XFER INDEX                    80203310
01D9 00 C70001F4 LD5  LD   L3 LCCN+16    PICKUP DIRECTORY WD               80203320
01DB DD D7DDDB0C      STO  L3 DRT8L+17   SET IN DIRECTORY T8L              8D203330
01DD D  73D1          MOX   3 1          SKIP WHEN DONE                    8D203340
01DE D  7DFA          MOX     LD5        XFER NEXT WORD                    8D203350
01DF D  6311          LDX   3 17         SET XR = ENTRY COUNT              80203360
01E0 DD 6FDDD599      STX  L3 DRCT       SAVE XR IN ETY CTR                8D203370
01E2 0  7D11          MDX     LO4        SKIP OVER CONSTANTS               8D203380
                        *                                                  8D203390
                        *     DDM DISK LOCATION CONSTANTS                  8D2D340D
```

OIMAL LDAOER/ORGANIZOR SECTION (CARD)

```
                        *
01E3 0  0007    K7      DC      7               CONSTANT 7                      80203410
01F4 0  023A    LCCN    OC      /023A           HEADER TEST CONSTANT            80203420
01E5 0  0014            DC      20              ORG ADDRESS                     80203430
01E6 0  0000            DC      0               CYLINDER ADDRESS                80203440
01E7 0  0015            DC      21              XFER ADDRESS                    80203450
01E8 0  020A            DC      /020A           COLD START LDR CNST             80203460
01E9 0  0DAC            DC      3500            ORG ADDRESS                     80203470
01EA 0  0000            DC      0               CYLINDER ADDRESS                80203480
01EB 0  0DAD            DC      3501            XFER ADDRESS                    80203490
01EC 0  0242            DC      /0242           LDR/ORG CONSTANT                80203500
01E0 0  0146            DC      326             ORG ADDRESS                     80203510
01EE 0  0000            DC      0               CYLINDER ADDRESS                80203520
01EF 0  0147            DC      327             XFER ADDRESS                    80203530
01F0 0  0232            DC      /0232           SEL/EXC CONSTANT                80203540
01F1 0  0044            DC      /0044           ORG ADDRESS                     80203550
01F2 0  0000            DC      0               CYLINDER ADDRESS                80203560
01F3 0  0045            DC      /0045           XFER ADDRESS                    80203570
                        *                                                       80203580
                        *       PREPARE TO INPUT DFTS.                          80203590
                        *                                                       80203600
01F4 0  C066    LO4     LD      CYIND           FETCH CYLINDER TO USE           80203610
01F5 0  1803            SRA     3               POSITION SEEK COUNT             80203620
01F6 0  D004            STD     LD8+2           SET IN SEEK CALL                80203630
01F7 00 44000360        BSI  L  DRDY            CHECK FOR READY DISK            80203640
01F9 00 44000381 LO8    BSI  L  SKOT            GO SEEK TO LAST USED            80203650
01FB 0  0000            DC      0               *CYLINDER                       80203660
01FC 0  1010    LO9     SLA     16              ZERO A REG                      80203670
01FD 0  0056            STD     DAD             CLEAR ORG ADDRS IN              80203680
01FE 0  0058            STD     OWC             CLEAR OUTPUT AREA WC            80203690
01FF 0  D058            STD     CDCT            CLEAR CARD COUNT                80203700
0200 0  6200            LDX     2 0             INITIALIZE MOVE XR              80203710
                        *                                                       80203720
                        *       INPUT DIAG FUNCTION TESTS.                      8020373,
                        *                                                       80203740
0201 00 C40004C2 LD10   LD   L  LCD             PICKUP LAST CARD IND            80203750
0203 00 4C180213        BSC  L  LO108,+-        BRANCH IF IND NOT ON            80203760
0205 0  085C            XID     FEED            CLEAR 1442                      80203770
0206 0  1010            SLA     16              CLEAR A REG                     80203780
0207 00 D40004C2        STD  L  LCD             CLEAR LAST CARD SW.             80203790
0209 00 44000780        BSI  L  LDG             PRINT TERMINATION SQ            80203800
020B 0  09FF            DC      MSG6            MESSAGE ADDRESS                 80203810
020C 00 0C0004C6        XIO  L  SNR             RESET 1442 DSW                  80203820
020E 0  3301    W3301   DC      /3301           TERM INDICATE WAIT              80203830
020F 0  0850            XIO     OESW            SENSE DATA ENTRY SWS            80203840
0210 0  F04F            EOR     DESW            CHECK IF TERM REQST             80203850
0211 00 4C180336        BSC  L  LO36,+-         BRANCH IF TERM REQST            80203860
0213 00 440004A9 LD10B  BSI  L  RDCD            GO INPUT 1 CARD                 80203870
0215 00 C4000AAB        LD   L  IN              PICKUP 1ST CARD ENTY            80203880
0217 00 74000258        MDX  L  CDCT,0          SKIP IF 1ST CARD                80203890
0219 0  701A            MDX     LO12            BRANCH  NOT 1ST CARD            80203900
021A 00 F400075F        EOR  L  K81             CHECK IF EDIT CARD              80203910
021C 0  4820            BSC     Z               SKIP IF EOIT CARD               80203920
021D 0  7004            MDX     LO10C           BR  NOT EOIT CARD               80203930
021E 00 44000529        BSI  L  EOIT            GO SERVICE EDIT CARD            80203940
0220 0  6200            LDX  2  0               OUTPUT XR TO 0                  80203950
0221 0  70DF            MDX     LO10            GO READ NEXT CARD               80203960
                        *                                                       80203970
                        *       DETERMINE IF CARD OR CORE IMAGE IS TO           80203980
                        *       BE WRITTEN ON DISK. IMAGE DICTATED BY           80203990
                        *       PROGRAM IO.                                     80204000
                        *                                                       80204010
                        *       IMG AND FMT WILL BE 0 IF 8/8 CARD.              80204020
                        *                                                       80204030
                        *                                                       80204040
0222 00 C400056A LO10C  LD   L  SEQ             GET EDIT CARD SEQ NMBR          80204050
0224 00 4C200558        BSC  L  EDIT3,Z         BRANCH IF TERM NOT READ         80204060
0226 00 C4000AAC        LD   L  IN+1            PICKUP 2ND WORD                 80204070
0228 0  100B            SLA     8               A REG TO 0 IF 8/8 CD            80204080
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OIMAL LOADER/ORGANIZOR SECTION (CARD)

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0229 0  0034            STO     FMT             SET IN FORMAT INDCTR            80204090
022A 0  0034            STO     IMG             SET IN IMAGE IND                80204100
022B 00 4C180234        BSC  L  LO12,+-         BRANCH IF 8/8 CARD              80204110
                        *                                                       80204120
                        *       IMG WILL BE 1 IF RELOCATABLE PROGRAM            80204130
                        *                                                       80204140
0220 00 C4000AAE        LO   L  IN+3            PICKUP ABS/REL IND              80204150
022F 0  180D            SRA     13              POSITION REL BIT                80204160
0230 0  002E            STO     IMG             SET RESULT IN IMAGE             80204170
                        *                                                       80204180
0231 00 74010258 LD11   MDX  L  CDCT,1          ADD 1 TO CARD COUNT             80204190
0233 0  7DCD            MDX     LO10            GO READ NEXT CARD               80204200
                        *                                                       80204210
0234 00 74000259 LO12   MDX  L  OA0,0           SKIP IF ORG IND = 0             80204220
0236 0  7039            MDX     LO19A           ORG ADDRESS SET  GO             80204230
0237 00 7400025E        MDX  L  FMT,0           SKIP IF 8/8 FORMAT              80204240
0239 0  7006            MDX     LO13            BRANCH  12/4 FORMAT             80204250
023A 00 C4000AF5        LD   L  IN+74           PICKUP L-O ADRS BITS            80204260
023C 0  1808            SRA     8               POSITION IN L-O A RG            80204270
023D 00 EC00AF6         OR   L  IN+75           ADD IN H-O ADDRS BIT            80204280
023F 0  7D07            MOX     LO14            BYPASS 12/4 FORM OPS            80204290
0240 00 C4000AAC LO13   LD   L  IN+1            PACK 12/4 ORG ADDRS             80204300
D242 0  1890            SRT     16              SAVE IN 0 REG                   80204310
0243 00 C4000AA8        LD   L  IN              PICKUP REMAIN OF ADR            80204320
0245 0  1804            SRA     4               POSITION                        80204330
0246 0  1084            SLT     4               PACK ADDRESS                    80204340
0247 0  8014    LO14    CMP     K3000           CHECK IF ADDRS OK               80204350
0248 0  7001            MDX     LO15            ADDRS GREATER  3000             80204360
0249 0  7004            MDX     LO16            ADDRS OK                        80204370
024A 0  8012    LO15    CMP     K70FF           CHECK IF ADDRS OK               80204380
0248 0  7002            MDX     LO16            ADDRS OK                        80204390
024C 0  70E4            MDX     LO11            ADDRS LESS THAN 70FF            80204400
D24D 0  70E3            MDX     LO11            ADDRS EQUAL 70FF                80204410
024E 0  D00A    LO16    STO     OAD             SET ORG ADDRESS                 80204420
024F 00 D400059E        STO  L  LDO             SET IN LOC DIR CNST             80204430
0251 0  CC09            LO      CYIND           PICKUP SECTOR ADDRS             80204440
D252 00 0400059F        STO  L  LOSC            SET IN LOC DIR CNST             80204450
0254 0  6101            LDX  1  1               INITIALIZE LOC DIRCT            80204460
0255 00 60000590        STX  L1 LDNC            * CYLINDER COUNT                80204470
D257 0  700C            MDX     LO17            SKIP OVER CONSTANTS             80204480
                        *                                                       80204490
0258 0  0000    CDCT    DC      0               CARD COUNTER                    80204500
0259 0  0000    OAO     DC      0               PROG ORG ADDRS IND              80204510
025A 0  0000    OWC     OC      0               OUTPUT AREA WORD CNT            80204520
0258 0  0000    CYIND   DC      0               SECTOR BEING USED               80204530
025C 0  3000    K3000   DC      /3000           ADDRS CHECK CONSTANT            80204540
025D 0  70FF    K70FF   DC      /70FF           ADDRS CHECK CONSTANT            80204550
025E 0  0000    FMT     OC      0               CARD FORMAT                     80204560
025F 0  0000    IMG     OC      0               IMAGE INDICATOR                 80204570
0260    0000            BSS  E  0                                               80204580
0260 0  FF00    DESW    DC      /FF00           SENSE DATA ENTRY                80204590
0261 0  0740            DC      /0740           * SWITCH IOCC                   80204600
0262 0  0000    FEEO    DC      0               1442 CONTROL FEED               80204610
0263 0  1402            DC      /1402                                           80204620
0264 0  C0F9    LO17    LD      FMT             PICKUP FORMAT IND               80204630
0265 0  4818            BSC     +-              SKIP IF 12/4 CARD               80204640
0266 0  7003            MDX     LO18            BRANCH ON 8/8 CARD              80204650
0267 00 C4000AB7        LD   L  IN+12           PICKUP 12/4 PIO LOC             80204660
0269 0  7002            MOX     LO19            BRANCH TO STORE                 80204670
026A 00 C4000AAC LO18   LO   L  IN+1            PICKUP 8/8 PIO LOC              80204680
026C 00 0400059C LO19   STO  L  LOP             SAVE IN LOC DIR CNST            80204690
026E 00 D400056C        STO  L  PCK             SAVE FOR EDIT RTN               80204700
                        *                                                       80204710
                        *       THIS SECTION PERFORMS THE CARD TO DISK          80204720
                        *       OPERATIONS ON 12/4 CARD IMAGE FORMATS.          80204730
                        *                                                       80204740
0270 0  COED    LO19A LO        FMT             PICKUP CARD FORMAT              80204750
0271 00 4C18031E        BSC  L  LD34,+-         BRANCH IF 8/8 FURMAT            80204760
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0273 00 C4000AAE          LD   L  IN+3        PICKUP 12/4 WC COL          80204770
0275 0  F026              EOR     KF          CHECK IF END CARD           80204780
0276 00 4C200282          BSC  L  LO20,Z      BRANCH IF NOT END CD        80204790
0278 0  6822              STX     ECD         SET END CARD SWITCH         80204800
0279 00 C4000AB0          LO   L  IN+5        PICKUP L-D XFER ADRS        80204810
027B 0  1890              SRT     16          SET IN O REG                80204820
027C 00 C4000AAF          LD   L  IN+4        PICKUP H-D XFER ADRS        80204830
027E 0  1804              SRA     4           POSITION TO PACK            80204840
027F 0  1084              SLT     4           PACK 12-4 XFER ADRS         80204850
0280 00 D40005A2          STO  L  LDXA        SAVE IN LOC DIR AREA        80204860
0282 0  C0DC        LD20  LD      IMG         PICKUP IMAGE INDICAT        80204870
0283 00 4C1802E6          BSC  L  LO28,+-     BRANCH IF CORE IMAGE        80204880
0285 0  61B0              LDX  1  -80         SET INPUT AREA XR           80204890
0286 00 C5000AFB    LO21  LD   L1 IN+80       PICKUP INPUT WORD           80204900
0288 00 D6000004          STO  L2 OUT         SET IN OUTPUT AREA          80204910
028A 0  7201              MDX  2  1           ADD 1 TO OUTPUT XR          80204920
028B 0  7101              MDX  1  1           SKIP WHEN 80 COL MVD        80204930
028C 0  70F9              MDX     LO21        CONTINUE MOVE DP            80204940
028D 00 7450025A          MDX  L  DWC,80      ADD 80 TO OUT WC            80204950
028F 00 7401029E          MDX  L  XFCT,1      ADD 1 TO CD XFER CUT        80204960
0291 0  1010              SLA     16          CLEAR ACC                   80204970
0292 00 7400029B          MDX  L  ECD,0       SKIP IF NOT END CARD        80204980
0294 0  7004              MDX     LO21A       BRANCH  END CARD            80204990
0295 0  C008              LD      XFCT        PICK UP XFER COUNT          80205000
0296 0  F006              EOR     K4          CHECK IF 4TH CARD           80205010
0297 00 4C200201          BSC  L  LO10,Z      BRANCH IF NOT 4TH CD        80205020
0299 0  D004        LO21A STO     XFCT        CLEAR XFER COUNT            80205030
029A 0  7004              MDX     LO22        SKIP OVER CONSTANTS         80205040
029B 0  0000        ECD   DC      0           END CARD SWITCH             80205050
029C 0  F000        KF    DC      /F000       END CARD CHECK CONST        80205060
029D 0  0004        K4    DC      4           CONSTANT 4                  80205070
029E 0  0000        XFCT  DC      0           CARD XFER COUNTER           80205080
                    *                                                     8020509C
                    *     THIS SECTION IS COMMON FOR ALL CARD TO          80205100
                    *     DISK OPERATIONS                                 80205110
                    *                                                     80205120
029F 00 7401025A    LD22  MDX  L  DWC,1       INCLUDE SID IN W C          80205130
02A1 0  C0B9              LD      CYIND       PICKUP SECTOR ADDRS         80205140
02A2 0  D009              STO     LO23+4      SET IN READ CALL            80205150
02A3 0  0000              STO     LO24+4      SET IN WRITE CALL           80205160
02A4 0  C0B5              LD      DWC         PICKUP OUTPUT WC            80205170
02A5 0  D009              STO     LO24+2      SET IN WRITE CALL           80205180
02A6 00 44000360          BSI  L  DRDY        CHECK DISK READY            80205190
                    *                                                     80205200
02A8 00 44000393    LO23  BSI  L  DRD         GO READ DISK SID            80205210
02AA 0  0001              DC      1           WORD COUNT                  80205220
02AB 0  0002              DC      OUT-2       INPUT AREA                  80205230
02AC 0  0000              DC      0           SECTOR ADDRESS              80205240
                    *                                                     80205250
02AD 00 440003CC    LO24  BSI  L  DWRT        GO WRITE DISK RECORD        80205260
02AF 0  0000              DC      0           WRITE WORD COUNT            80205270
0280 0  0002              DC      OUT-2       OUTPUT AREA                 80205280
0281 0  0000              DC      0           SECTOR ADDRESS              80205290
                    *                                                     80205300
0282 00 7401025E          MDX  L  CYINO,1     UPDATE CYLINDER ADDR        80205310
0284 0  C0A6              LD      CYIND       PICKUP CYLINDER ADDR        80205320
0285 0  100D              SLA     13          SAVE SECTOR BITS            80205330
0286 00 4C200204          BSC  L  LO26,Z      BRANCH IF NOT SECT 0        80205340
0288 00 C4000524          LD   L  NXTCY       ADDRS OF CYL USED           80205350
028A 00 D4000523          STO  L  LSTCY       SET IN LAST USED LOC        80205360
028C 00 440004FD          BSI  L  CYCK        CHECK NEXT CYL              80205370
028E 00 C4000524          LD   L  NXTCY       PICKUP NXT AVAIL CYL        80205380
02C0 0  D09A              STO     CYIND       SAVE IN WORK LOCATN         80205390
02C1 00 94000523          S    L  LSTCY       SUB LAST USED CYL           80205400
02C3 0  1803              SRA     3           POSITION SEEK COUNT         80205410
02C4 0  D004              STO     LO25+2      SET IN SEEK CALL            80205420
                    *                                                     80205430
02C5 00 44000360          BSI  L  DRDY        CHECK DISK READY            80205440
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02C7 60 44000381    LD25  BSI  L  SKDT        GO SEEK DISK                80205450
02C9 0  0000              DC      0           SEEK COUNT                  80205460
                    *                                                     80205470
02CA 00 74000298          MDX  L  ECD,0       SKIP IF NOT END CARD        80205480
02CC 0  7007              MDX     LD26        BRANCH ON END CARD          80205490
02CD 00 7401059D          MDX  L  LDNC,1      +1 TO NMBR OF CYLS          80205500
02CF 00 6680059D          LDX  I2 LDNC        XR = NMBR OF CYLS           80205510
02D1 0  C089              LD      CYIND       PICKUP NEXT CYL             80205520
0202 00 D600059E          STD  L2 LDSC-1      SET IN LOC DIR CONST        80205530
                    *                                                     80205540
0204 00 74010598    LD26  MDX  L  LDNS,1      ADD 1 TO NMBR SECTOR        80205550
02D6 0  6200              LOX  2  0           OUTPUT XR TO 0              80205560
02D7 0  6A82              STX  2  DWC         OUTPUT WORD CNT TO 0        80205570
02D8 0  C0C2              LD      ECD         PICKUP END CARD SW          80205580
02D9 00 4C2002DF          BSC  L  LO27,Z      BRANCH IF END CARD          80205590
02D8 0  C083              LD      IMG         PICKUP IMAGE INDICTR        80205600
02DC 00 4C040201          BSC  L  LO10,E      BRANCH IF CARD IMAGE        80205610
02DE 0  7034              MDX     LO33        BRANCH NOT CD IMAGE         80205620
                    *                                                     80205630
                    *     THESE OPERATION ARE PERFORMED IF THE            80205640
                    *     LAST CARD WAS AN END CARD.                      80205650
                    *                                                     80205660
02DF 00 4400056E    LO27  BSI  L  DIRC        GO UPDATE LOC DIRECT        80205670
02E1 0  1010              SLA     16          CLEAR A REG                 80205680
02E2 00 D4000298          STO  L  ECD         CLEAR END CARD SWITC        80205690
02E4 00 4C0001FC          BSC  L  L09         REINITIALIZE                80205700
                    *                                                     80205710
                    *     THIS SECTION PERFORMS THE CARD TO DISK          80205720
                    *     OPERATIONS ON 12/4 CORE IMAGE FORMATS           80205730
                    *                                                     80205740
02E6 0  C084        LO28  LD      ECD         FETCH END CARD SW           80205750
02E7 00 4C1802EC          BSC  L  LO29,+-     BRANCH IF NOT END CD        80205760
02E9 0  7200              MDX  2  0           SKIP IF D/A EMPTY           80205770
02EA 0  7084              MDX     LO22        GO WRITE DISK               80205780
02EB 0  70EA              MDX     LO26+2      GO SETUP FOR NXT DFT        80205790
                    *                                                     80205800
02EC 00 44000478    LO29  BSI  L  CV12        GO PACK 12-4 DATA           80205810
02EE 00 C4000AA8          LD   I  IN          PICKUP CARD ADDRESS         80205820
02F0 0  D029              STO     ADCK        SET IN ADDR CK SW           80205830
02F1 00 C4000AA0          LD   L  IN+2        PICKUP WORD COUNT LC        80205840
02F3 0  E027              AND     K3F         SAVE WORD COUNT BITS        80205850
02F4 0  D001              STD     LD30+1      SET IN LOAD XR INSTR        80205860
02F5 00 67000000    LD30  LDX  L3 0           SET XR = WORD COUNT         80205870
02F7 0  6109              LOX  1  9           SET INPUT MOVE INDEX        80205880
                    *                                                     80205890
                    *     THIS SECTION IS COMMON TO BOTH 12/4 AND         80205900
                    *     8/8 CORE IMAGE FORMATS.                         80205910
                    *                                                     80205920
02F8 0  1010        LO31  SLA     16          CLEAR A REG                 80205930
02F9 0  D022              STO     ZERO        CLEAR ZEROS SWITCH          80205940
02FA 0  C01F              LD      ADCK        PICKUP CARD ADDRESS         80205950
02FB 00 F400029F          EOR  L  DAD         CHECK IF EXPECTED           80205960
02FD 00 4C180302          BSC  L  LO32,+-     BRANCH IF PROP ADDRS        80205970
02FF 0  681C              STX     ZERO        SET ZEROS SWITCH            80205980
0300 0  1010              SLA     16          CLEAR A REG                 80205990
0301 0  7002              MDX     LO32+2      GO STORE ZEROS              80206000
0302 00 C5000AA8    LO32  LD   L1 IN          PICKUP DATA WORD            80206010
0304 00 D6000004          STO  L2 OUT         SET IN OUTPUT AREA          80206020
0306 00 74010259          MDX  L  DAD,1       ADD 1 TO EXPCTD ADRS        80206030
0308 00 7401025A          MDX  L  DWC,1       ADD 1 TO OUTPUT WC          80206040
030A 0  C011              LO      ZERO        GET ZEROS SWITCH            80206050
0308 0  4818              BSC     +-          SKIP IF ON                  80206060
030C 0  7101              MDX  1  1           INCR INPUT INDEX            80206070
030D 0  7201              MDX  2  1           INCR OUTPUT INDEX           80206080
030E 00 C4000258          LD   L  DWC         LOAD OUTPUT WORD CT         80206090
0310 0  F00C              EOR     K320        CHECK IF WC = 320           80206100
0311 00 4C18029F          BSC  L  LO22,+-     BRANCH IF WC = 320          80206110
                    *                                                     80206120
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OIMAL LOADER/ORGANIZOR SECTION (CARD)

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0313 00 7400031C    LO33  MDX  L  ZERO,0      SKIP IF ZERO SW OFF        80206130
0315 0  70E2              MDX     LO31        BRANCH  ZERO SW ON         80206140
0316 0  73FF              MDX   3 -1          SKIP IF CD WC TO 0         80206150
0317 0  70EA              MDX     LO32        GO MOVE NEXT WORD          80206160
0318 00 4C000231          BSC  L  LO11        GO INPUT NEXT CARD         80206170
                    *                                                    80206180
031A 0  0000        AOCK  DC      0           ADDRESS CHECK STORAG       80206190
031B 0  003F        K3F   DC      /003F       CONSTANT                   80206200
031C 0  0000        ZERO  DC      0           ZERO FILL INDICATOR        80206210
031D 0  0140        K320  DC      320         CONSTANT                   80206220
                    *                                                    80206230
                    *     THIS SECTION PERFORMS THE CARD TO DISK         80206240
                    *     OPERATIONS ON 8/8 CORE IMAGE.                  80206250
                    *                                                    80206260
031E 00 C4000AF5    LO34  LD   L  IN+74       PICKUP L-O 8/8 ADDRS       80206270
0320 0  1808              SRA     8           POSITION FOR PACK          80206280
0321 00 EC000AF6          OR   L  IN+75       ADD IN H-O 8/8 ADDRS       80206290
0323 0  D0F6              STO     AOCK        SET IN ADDRS CK SW         80206300
0324 00 4C200330          BSC  L  LO35,Z      BRANCH IF NOT END CD       80206310
0326 00 6C000298          STX  L  ECD         SET END CARD SWITCH        80206320
0328 00 C4000AB5          LD   L  IN+10       PICKUP L-O XFER ADRS       80206330
032A 0  1808              SRA     8           POSITION FOR PACK          80206340
032B 00 EC000AB6          OR   L  IN+11       ADD IN H-O XFER ADRS       80206350
032D 00 D40005A2          STO  L  LOXA        SAVE XFER ADDRESS          80206360
032F 0  70B9              MDX     LO28+3      GO SERVICE END CARD        80206370
                    *                                                    80206380
0330 00 44000444    LO35  BSI  L  CV8         GO PACK 8-8 DATA           80206390
0332 00 67800ACF          LDX  I3 IN+36       SET XR = WORD COUNT        80206400
0334 0  61C0              LDX   1 0           SET INPUT XR               80206410
0335 0  70C2              MDX     LO31        GO TO COMMON SECTION       80206420
                    *                                                    80206430
                    *     THE FOLLOWING OPERATIONS ARE PERFORMED         80206440
                    *     UPON COMPLETION OF THE DISK LOAD.              80206450
                    *                                                    80206460
0336 00 C4000258    LO36  LD   L  CYIND       PICKUP LAST USED SEC       80206470
0338 00 D4000005          STO  L  DUT+1       SET IN OUTPUT AREA         80206480
033A 0  4025              BSI     OROY        CHECK DISK READY           80206490
033B 0  402F              BSI     SKHM        INSURE OISK AT HOME        80206500
033C 00 C400014E          LD   L  CYTBL+6     PICKUP HIST TRACK          80206510
033E 0  D008              STO     LO38+3      SET IN READ CALL           80206520
033F 0  D00C              STO     LO39+4      SET IN WRITE CALL          80206530
0340 0  1803              SRA     3           REMOVE SECTOR BITS         80206540
0341 0  D001              STO     LO37+1      SET IN SEEK CALL           80206550
                    *                                                    80206560
0342 0  403E        LO37  BSI     SKOT        SEEK TO HIST TRACK         80206570
0343 0  0000              DC      0           SEEK COUNT                 80206580
                    *                                                    80206590
0344 0  404E        LO38  BSI     DRD         READ SECTOR ID             80206600
0345 0  0002              DC      2           WORD COUNT                 80206610
0346 0  0002              DC      OUT-2       I/O AREA                   80206620
0347 0  0000              DC      0           SECTOR ADDRESS             80206630
                    *                                                    80206640
0348 00 440003CC    LO39  BSI  L  DWRT        GO WRITE SECTOR            80206650
034A 0  0003              DC      3           WORD COUNT                 80206660
034B 0  0002              DC      OUT-2       I/O AREA                   80206670
034C 0  0000              DC      0           SECTOR ADDRESS             80206680
                    *                                                    80206690
                    *     LIST LOCATION DIRECTORY.                       80206700
                    *                                                    80206710
034D 00 44000520          BSI  L  ORLST       GO LIST DIRECT TABLE       80206720
                    *                                                    80206730
                    *     LIST EDIT TABLE                                80206740
                    *                                                    80206750
034F 00 44000578          BSI  L  EDLST       GO LIST EDIT TABLE         80206760
                    *                                                    80206770
                    *     WRITE LOCATION DIRECTORY ON DISK               80206780
                    *                                                    80206790
0351 00 44000686          BSI  L  WRTLD       GO WRITE LOC DIRECT        80206800
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                    *                                                    80206810
                    *     WRITE EDIT TABLE ON DISK                       80206820
                    *                                                    80206830
0353 00 440006C4          BSI  L  WRTED       GO WRITE EDIT TABLE        80206840
                    *                                                    80206850
                    *     PUNCH COLD START CALL CARDS                    80206860
                    *                                                    80206870
0355 00 0C0001C0          XIO  L  SNSW        SENSE SNS/PGM SWS          80206880
0357 00 4C2801A8          BSC  L  DONE,+Z     BRANCH IF ADD PROGRAM      80206890
0359 00 440006D4          BSI  L  PCSC        PUNCH CALL CARDS           80206900
                    *                                                    80206910
                    *     PRINT SEEK COUNT FOR BIT SWITCH ENTERED        80206920
                    *     COLD START CALL.                               80206930
                    *                                                    80206940
0358 00 44000418          BSI  L  LCSC        LIST CALL SEEK COUNT       80206950
                    *                                                    80206960
                    *     OPERATIONS COMPLETE                            80206970
                    *                                                    80206980
0350 0  4000        LO40  BSI     SKHM        RETURN ARM TO HOME         80206990
035E 00 4C000192          BSC  L  W3300       DONE  GO TO OPT WAIT       80207000
                    *                                                    80207010
                    *     THIS ROUTINE CHECKS THE DISK DRIVE FOR         80207020
                    *     A READY CONDITION.                             80207030
                    *                                                    80207040
0360 0  0000        OROY  DC      0           ENTRY POINT                80207050
0361 00 0C000040C         XIO  L  OSNR        SENSE DISK STATUS          80207060
0363 0  1002              SLA     2           POSITION READY BIT         80207070
0364 00 4C900360          BSC  I  OROY,-      RETURN TO USER-READY       80207080
0366 0  1001              SLA     1           POSITION BUSY BIT          80207090
0367 00 4C280361          BSC  L  OROY+1,+Z   BRANCH IF BUSY             80207100
0369 0  3302        W3302 DC      /3302       DISK NOT READY             80207110
036A 0  70F6              MDX     DRDY+1      CHECK AGAIN                80207120
                    *                                                    80207130
                    *     THIS ROUTINE SEEKS THE 2310 TO ITS             80207140
                    *     HOME POSITION.                                 80207150
                    *                                                    80207160
0368 0  0000        SKHM  OC      0           ENTRY POINT                80207170
036C 0  6304              LOX   3 4           SET RETRY INDEX            80207180
036D 00 0C00040C    SKHM1 XIO  L  OSNR        SENSE/RESET STATUS         80207190
036F 0  D010              STO     SKST        SAVE STATUS                80207200
0370 0  1004              SLA     4           POSITION HOME BIT          80207210
0371 00 4CA80368          BSC  I  SKHM,+Z     EXIT IF DISK HOME          80207220
0373 0  73FF              MDX   3 -1          SKIP IF 3RD TRY            80207230
0374 0  7003              MDX     SKHM2       GO ISSUE SEEK CMND         80207240
0375 0  C00A              LO      SKST        RETRIEVE LAST DSW          80207250
0376 0  3303        W3303 OC      /3303       FAILED TO IND HOME         80207260
0377 0  70F4              MDX     SKHM+1      TRY AGAIN                  80207270
0378 00 0C00040E    SKHM2 XIO  L  HOME        SEEK TO HOME               80207280
037A 00 0C00040A          XIO  L  OSN         SENSE DISK STATUS          80207290
037C 0  1001              SLA     1           POSITION OP CP BIT         80207300
037D 00 4C10037A          BSC  L  SKHM2+2,-   BRANCH IF NOT OP CMP       80207310
037F 0  70E0              MDX     SKHM1       GO CHECK HOME BIT          80207320
                    *                                                    80207330
0380 0  0000        SKST  OC      0           DSW HOLD LOCATION          80207340
                    *                                                    80207350
                    *     THIS ROUTINE SEEKS THE DISK OUT TO THE         80207360
                    *     DESIRED CYLINDER.                              80207370
                    *                                                    80207380
0381 0  0000        SKOT  OC      0           ENTRY POINT                80207390
0382 00 C4800381          LO   I  SKOT        PICK UP SEEK COUNT         80207400
0384 00 D4000410          STO  L  SEEK        PLACE IN SEEK CMND         80207410
0386 00 0C000410          XIO  L  SEEK        ISSUE SEEK                 80207420
0388 00 0C00040A    SKOT1 XIO  L  OSN         SENSE DISK STATUS          80207430
038A 0  1001              SLA     1           POSITION OP CMP BIT        80207440
038B 00 4C100388          BSC  L  SKOT1,-     BRANCH IF NOT OP CMP       80207450
038D 00 0C00040C          XIO  L  OSNR        SENSE/RESET DSW            80207460
038F 00 74010381          MDX  L  SKOT,1      MODIFY RETURN              80207470
0391 00 4C800381          BSC  I  SKOT        RETURN TO USER             80207480
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                        *
                        *     THIS ROUTINE READS THE DISK AND CHECKS          80207490
                        *     FOR THE PROPER SECTOR ID.                       80207500
                        *                                                     80207510
                        *                                                     80207520
0393 0  000D    DRD     DC      0           ENTRY POINT                       80207530
0394 0  692E            STX     1 DRD3+1    SAVE INDEX REG 1                  80207540
0395 0  6A2F            STX     2 DRD3+3    SAVE INDEX REG 2                  80207550
0396 0  6B30            STX     3 DR03+5    SAVE INDEX REG 3                  80207560
0397 0  6303            LDX     3 3         SET RETRY INDEX                   80207570
0398 00 6680D393        LOX     I2 ORD      SET XR = CALL ADDRS               80207580
039A 0  C201            LD      2 1         GET INPUT AREA                    80207590
039B 0  0076            STO     READ        SET IN READ COMMAND               80207600
039C 0  0002            STO     *+2         SET IN STORE INSTR                80207610
039D 0  C200            LO      2 0         PICKUP SCN CTL+WD CT              80207620
039E 00 04000000        STD     L 0         SET IN INPUT TABLE                80207630
03A0 0  C202            LO      2 2         PICKUP SECTOR ID                  80207640
03A1 0  1883            SRT     3           SAVE SECTOR BITS                  80207650
03A2 0  C070            LD      READ+1      PICKUP READ COMMAND               80207660
03A3 0  1803            SRA     3           REMOVE OLD SECTOR BT              80207670
03A4 0  1083            SLT     3           ADD NEW SECTOR BITS               80207680
03A5 0  006D            STO     READ+I      UPDATE READ IOCC                  80207690
03A6 0  0866    DR01    XIO     READ        READ DISK                         80207700
03A7 0  0862            XIO     DSN         SENSE DISK STATUS                 80207710
03A8 0  1001            SLA     1           POSITION OP CMP BIT               80207720
03A9 00 4C1003A7        BSC     L DR01+1,-  BRANCH IF NOT OP CMP              80207730
03AC 0  0860            XIO     OSNR        SENSE/RESET STATUS                80207740
03AC 0  E05F            AND     DSNR        CHECK FOR ERROR BITS              80207750
03AF 00 4C1803B6        BSC     L ORD2,+-   BRANCH IF NO ERRORS               80207760
03AF 0  73FF            MDX     3 -1        SKIP IF 3RD READ                  80207770
03B0 0  70F5            MDX     ORD1        TRY AGAIN                         80207780
03B1 00 4400078B        BSI     L LOG       PRINT READ ERROR                  80207790
03B3 0  09D4            OC      MSG2        MESSAGE ID                        80207800
03B4 00 4C000429        BSC     L ERR                                         80207810
03B6 00 6580041Z DRD2   LOX     I1 READ     SET XR = INPUT AREA               80207820
03B8 0  C202            LD      2 2         PICKUP EXPECTED SID               80207830
03B9 0  F101            EOR     1 1         CHECK IF                          80207840
03BA 00 4C1803C7        BSC     L DRD3,+-   BRANCH IF PROPER SID              80207850
03BC 0  73FF            MDX     3 -1        SKIP IF 3RD TRY                   80207860
03BD 0  70F8            MDX     DRD1        REREAD SECTOR                     80207870
03BE 00 4400078B        BSI     L LOG       PRINT WRONG SECTOR                80207880
03C0 0  09DD            OC      MSG3        MESSAGE ID                        80207890
03C1 0  7067            MDX     ERR         GO TO ERROR ROUTINE               80207900
03C2 00 65000000 DR03   LDX     L1 0        RESTORE XR 1                      80207910
03C4 00 66000000        LDX     L2 0        RESTORE XR 2                      80207920
03C6 00 67000000        LOX     L3 D        RESTORE XR 3                      80207930
03C8 00 74030393        MOX     L ORD,3     MODIFY RETURN                     80207940
03CA 00 4C800393        BSC     I DRD       RETURN TO USER                    80207950
                        *                                                     80207960
                        *     THIS ROUTINE WRITES THE DISK AND                80207970
                        *     PERFORMS A MODULO 4 CHECK ON THE DATA.          80207980
                        *                                                     80207990
03CC 0  0000    OWRT    DC      0           ENTRY POINT                       80208000
03CD 0  6A35            STX     2 DWRT3+I   SAVE INDEX REG 2                  80208010
03CE 0  6B36            STX     3 DWRT3+3   SAVE INDEX REG 3                  80208020
03CF 0  6303            LDX     3 3         SET RETRY INDEX                   8020803D
03D0 00 668003CC        LOX     I2 OWRT     SET XR = ENTRY 1 CNT              80208040
03D2 0  C201            LO      2 1         PICKUP OUTPUT AREA                80208050
03D3 0  0040            STD     WRITE       SET IN WRITE IOCC                 8020806D
03D4 0  0041            STO     MOD4        SET IN MOD 4 CK IOCC              80208070
03D5 0  0002            STD     *+2         SET IN STORE INSTR                80208080
03D6 0  C200            LO      2 0         PICK UP WORD COUNT                80208090
03D7 00 04000000        STO     L 0         SET IN OUTPUT TABLE               80208100
03D9 0  C202            LO      2 2         PICKUP SECTOR ADDRES              80208110
03DA 0  1883            SRT     3           SAVE SECTOR BITS                  80208120
03DB 0  C039            LO      WRITE+1     PICKUP WRITE COMMAND              80208130
03DC 0  1803            SRA     3           REMOVE OLD SECT BITS              80208140
03DD 0  1083            SLT     3           ADD NEW SECTOR BITS               80208150
03DE 0  0036            STD     WRITE+1     UPDATE WRITE COMMAND              80208160
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03DF 0  1883            SRT     3           SAVE SECTOR BITS                  80208170
03E0 0  C036            LO      MOD4+1      PICKUP MODULO 4 CMND              80208180
03E1 0  1803            SRA     3           REMOVE OLD SECT BITS              80208190
03E2 0  1083            SLT     3           ADD NEW SECTOR BITS               80208200
03E3 0  0033            STO     MOD4+1      UPDATE MODULO 4 CMND              80208210
03E4 0  082F    DWRT1   XIO     WRITE       ISSUE WRITE COMMAND               80208220
03E5 0  0824            XID     DSN         SENSE DISK STATUS                 80208230
03E6 0  1001            SLA     1           POSITION OP CMP BIT               80208240
03E7 00 4C1003E5        BSC     L DWRT1+1,- BRANCH TILL OP COMPL              80208250
03E9 0  0822            XID     OSNR        RESET DSW                         80208260
03EA 0  E021            AND     DSNR        CHECK FOR ERROR                   80208270
03E8 00 4C1803F3        BSC     L DWRT2,+-  BRANCH IF NO ERROR                80208280
03EO 0  73FF            MDX     3 -1        SKIP IF 3RD TRY                   80208290
03EE 0  70F5            MOX     DWRT1       TRY AGAIN                         80208300
03FF 00 4400078B        BSI     L LOG       PRINT WRITE ERROR                 80208310
03F1 0  09E8            DC      MSG4        MESSAGE ID                        80208320
03F2 0  7036            MDX     ERR         GO TO ERRDR ROUTINE               80208330
                        *                                                     80208340
                        *     PERFORM MODULO 4 READ CHECK                     80208350
                        *                                                     80208360
03F3 0  0822    DWRT2   XIO     MOD4        ISSUE MOD 4 CHECK                 80208370
03F4 0  0815            XIO     DSN         SENSE DISK STATUS                 8D208380
03F5 0  1001            SLA     1           POSITION OP COMP BIT              80208390
03F6 00 4C1003F4        BSC     L DWRT2+1,- BRANCH TILL OP COMP               80208400
03F8 0  0813            XID     DSNR        RESET OSW                         80208410
03F9 0  E012            AND     DSNR        CHECK FOR ERROR                   80208420
03FA 00 4C180402        BSC     L DWRT3,+-  BRANCH IF NO ERROR                80208430
03FC 0  73FF            MDX     3 -1        SKIP IF 3RD TRY                   80208440
03FD 0  70E6            MDX     OWRT1       TRY AGAIN                         80208450
03FE 00 44000788        BSI     L LOG       PRINT MODULO 4 ERROR              80208460
0400 0  09F5            OC      MSG5        MESSAGE ID                        80208470
0401 0  7027            MDX     ERR         GO TO ERROR ROUTINE               80208480
0402 00 66000000 OWRT3  LOX     L2 0        RESTORE XR 2                      80208490
0404 00 67000000        LOX     L3 0        RESTORE XR 3                      80208500
0406 00 74030CC         MOX     L OWRT,3    MODIFY FOR RETURN                 80208510
0408 00 4C8003CC        BSC     I OWRT      RETURN TO USER                    80208520
                        *                                                     80208530
                        *     THE FOLLOWING WORDS ARE THE DISK IOCC'S         80208540
                        *                                                     80208550
040A    0000            BSS     E 0         ALIGN TO EVEN ADDRES              80208560
                        *                                                     80208570
040A 0  0000    DSN     DC      0           DISK SENSE IOCC                   80208580
040B 0  0700            DC      /0700                                         80208590
040C 0  87C0    DSNR    DC      /87C0       DISK SNS/RESET IOCC               80208600
040D 0  0701            OC      /0701                                         80208610
040E 0  00CA    HOME    DC      202         SEEK HOME IOCC                    80208620
040F 0  0404            OC      /0404                                         80208630
0410 0  0000    SEEK    OC      0           SEEK OUT IOCC                     80208640
0411 0  0400            DC      /0400                                         80208650
0412 0  0000    READ    DC      0           READ DISK IOCC                    80208660
0413 0  0600            OC      /0600                                         80208670
0414 0  0000    WRITE   DC      0           WRITE DISK IOCC                   80208680
0415 0  0500            DC      /0500                                         80208690
0416 0  0000    MOD4    DC      0           MOD 4 CHECK IOCC                  80208700
0417 0  0680            OC      /0680                                         80208710
                        *                                                     8020872D
                        *     THIS RDUTINE SETS UP TO PRINT THE SEEK          80208730
                        *     COUNT NEEDED BY THE BIT SWITCH ENTERED          80208740
                        *     COLD START CALL.                                80208750
                        *                                                     80208760
0418 0  0000    LCSC    DC      0           ENTRY POINT                       80208770
0419 00 C4000148        LD      L CYT8L     PICKUP HEADER CYL                 80208780
041B 0  1803            SRA     3           POSITION SEEK COUNT               80208790
041C 00 D400C8AA        STD     L HEXWD     SET IN CONVERT RTN                80208800
                        *                                                     80208810
041E 00 44000888        BSI     L HEXCV     CONVERT TO 1443 CODE              80208820
0420 00 C4000881        LD      L HEXCD+1   GET CONVERTED WORD                80208830
0422 00 D4000A92        STD     L MSGOF+17  SET IN MESSAGE                    80208840
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                        *                                                       80208850
0424 00 44000788        *       BSI  L  LDG         GO PRINT MESSAGE            80208860
0426 0  0A81            *       OC      MSGOF       MESSAGE AODRESS             80208870
                        *                                                       80208880
0427 00 4C800418        *       BSC  I  LCSC        RETURN TO USER              80208890
                        *                                                       80208900
                        *       THIS ROUTINE IS ENTERED ON A DISK READ,         80208910
                        *       WRITE OR MODULO 4 ERROR,IF THE ERROR            80208920
                        *       EXISTED FOR 3 CONSECUTIVE RETRIES. THE          80208930
                        *       PROGRAM WHICH WAS LOADING AT THE TIME           80208940
                        *       OF THE ERROR MUST BE RELOADED.                  80208950
                        *                                                       80208960
0429 00 44000360        ERR     BSI  L  ORDY        CHECK DISK READY            80208970
042B 00 44000368        *       BSI  L  SKHM        RETURN ARM TO HOME          80208980
                        *                                                       80208990
0420 0  3304            W3304   DC      /3304       OISK RD,WRT,MOD4 ERR        80209000
                        *                                                       80209010
042E 00 C400059F        *       LO   L  LDSC        PICKUP STARTING CYL         80209020
0430 0  1803            *       SRA     3           REMOVE SECTOR BITS          80209030
0431 0  1003            *       SLA     3           RESTORE SECTOR ADDRS        80209040
0432 00 D4000523        *       STO  L  LSTCY       SET IN CHECK WORO           80209050
                        *                                                       80209060
0434 00 440004FD        *       BSI  L  CYCK        CHECK NEXT CYLINOER         80209070
                        *                                                       80209080
0436 00 C4000524        *       LD   L  NXTCY       PICKUP NEXT GOOD CYL        80209090
0438 00 D400025B        *       STO  L  CYIND       SET IN USE INDICATOR        80209100
043A 0  6308            *       LDX     3 8         SET MOVE INDEX              80209110
043B 0  1010            *       SLA     16          CLEAR ACC                   80209120
043C 00 D700059A        ERR1    STO  L3 LDNS-1      STORE 0 IN DIR WORDS        80209130
043E 0  73FF            *       MDX     3 -1        SKIP WHEN DONE              80209140
043F 0  70FC            *       MDX     ERR1        CLEAR NEXT WORD             80209150
0440 00 D400029E        *       STO  L  XFCT        CLEAR CARD IMAGE COUNTER    80209160
0442 00 4C0001F4        *       BSC  L  LD4         RESTART LOAD OPS            80209170
                        *                                                       80209180
                        *       THIS ROUTINE CONVERTS 8-8 FORMAT CARDS          80209190
                        *       TO CORE IMAGE AND THEN PERFORMS A CHECK         80209200
                        *       SUM OF THE DATA READ.                           80209210
                        *                                                       80209220
0444 0  0000            CV8     DC      0           ENTRY POINT                 80209230
                        *                                                       80209240
                        *                                                       80209250
                        *                   CONVERT 8-8                         80209260
                        *                                                       80209270
0445 0  6A2D            *       STX     2 CV8C+1    SAVE XR 2                   80209280
0446 0  662E            *       STX     3 CV8C+3    SAVE XR 3                   80209290
0447 0  1010            *       SLA     16          ZERO A REG                  80209300
0448 0  63FE            *       LOX     3 -2        SET FETCH INDEX             80209310
0449 0  1004            C8S01   SLA     4           SHIFT LEET 4                80209320
044A 0  D0C8            *       STO     MOD4        SAVE IN WORK LOC            80209330
044B 00 C7000AF8        *       LD   L3 IN+80       FETCH SEQUENCE COLUMN       80209340
044D 0  4810            *       BSC     -           SKIP IF ALPHA CHAR          80209350
044E 0  7002            *       MDX     *+2         BYPASS INCREMENT            80209360
044F 00 74090416        *       MDX  L  MOD4,9      SET WORK LOC FOR ALPHA      80209370
0451 0  1002            *       SLA     2           CLEAR 12-11 ZONES           80209380
0452 0  4828            C8S02   BSC     +Z          SKIP IF DIGIT NOT FOUND     80209390
0453 0  7004            *       MDX     C8S03       BRANCH ON DIGIT FOUND       80209400
0454 00 74010416        *       MDX  L  MOD4,1      INCR DIGIT COUNTER          80209410
0456 0  1001            *       SLA     1           POSITION NEXT DIGIT         80209420
0457 0  70FA            *       MDX     C8S02       BRANCH TO CK DIGIT          80209430
0458 0  C0BD            C8S03   LD      MOD4        FETCH BIN EQU OF HOL CHAR   80209440
0459 0  7301            *       MOX     3 1         SKIP IF COL 80              80209450
045A 0  70EF            *       MDX     C8S01       GO CONVERT COL 80           80209460
045B 00 E4000258        *       EOR  L  CDCT        CHECK FOR PROP SEQUENCE     80209470
045D 00 4C200790        *       BSC  L  CKER,Z      BRANCH IF WRONG CARD        80209480
045F 0  62B0            *       LDX     2 -80       SET COLUMN INDEX            80209490
0460 00 C6000AFB        CV8A    LD   L2 IN+80       GET LO-ORDER 1/2 WD         80209500
0462 0  1808            *       SRA     8           POSITION                    80209510
0463 00 EF000AFC        *       DR   L2 IN+81       ADD HI-ORDER 1/2 WD         80209520
0465 00 D7000AA8        *       STD  L3 IN          STORE CONVERTED WRO         80209530
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0467 0  7301            *       MDX     3 1         ADD 1 TO CONVERT XR         80209530
0468 0  7202            *       MDX     2 2         INCREMENT COLUMN XR         80209540
0469 0  70F6            *       MDX     CV8A        CONTINUE TIL DONE           80209550
                        *                                                       80209560
                        *                   PEREORM CHECK-SUM                   80209570
                        *                                                       80209580
046A 0  6209            *       LOX     2 -39       SET WORD INDEX              80209590
0468 0  1010            *       SLA     16          CLEAR A REG                 80209600
046C 00 86000AD2        CV8B    A    L2 IN+39       ACC TOTAL ALL WORDS         80209610
046E 0  7201            *       MOX     2 1         INCREMENT WORO INDEX        80209620
046F 0  70FC            *       MDX     CV8B        CONTINUE TIL DONE           80209630
0470 00 4C20079D        *       BSC  L  CKER,Z      BRANCH ON WRONG CKSM        80209640
0472 00 66000000        CV8C    LDX  L2 0           RESTORE XR 2                80209650
0474 00 67000000        *       LOX  L3 0           RESTORE XR 3                80209660
0476 00 4C800444        *       BSC  I  CV8         RETURN TO USER              80209670
                        *                                                       80209680
                        *       THIS ROUTINE CONVERTS 12/4 FORMAT CARDS         80209690
                        *       TO CORE IMAGE AND THEN PERFORMS A CHECK         80209700
                        *       SUM ON THE DATA READ.                           80209710
                        *                                                       80209720
0478 0  0000            CV12    DC      0           ENTRY POINT                 80209730
                        *                                                       80209740
                        *                   CONVERT 12-4                        80209750
                        *                                                       80209760
0479 0  6924            *       STX     1 CV12F+1   SAVE INDEX REG 1            80209770
047A 0  6A25            *       STX     2 CV12E+3   SAVE INDEX REG 2            80209780
0478 0  6826            *       STX     3 CV12E+5   SAVE INDEX REG 3            80209790
047C 0  6188            *       LDX     1 -72       SET UP WORO INDEX           80209800
047D 0  6300            *       LDX     3 0         SET UP STORE INDEX          80209810
047E 0  62F0            CV12A   LDX     2 -3        SET UP SHIFT INDEX          80209820
047F 00 C60004A8        CV12B   LO   L2 SHIFT+3     PICKUP SHIFT INSTRN         80209830
0481 0  D006            *       STO     CV12C       SET IN ROUTINE              80209840
0482 00 C5000AF4        *       LO   L1 IN+73       PICKUP 2ND HALF WORD        80209850
0484 0  18D0            *       RTE     16          SET IN O REG                80209860
0485 00 C5000AF3        *       LO   L1 IN+72       PICKUP 1ST HALF WORD        80209870
0487 0  1804            *       SRA     4           POSITION                    80209880
0488 0  1000            CV12C   SLA     0           PACK A AND Q                80209890
0489 00 D7000AA8        *       STO  L3 IN          STORE CONVERTED WORD        80209900
048B 0  7301            *       MDX     3 1         MODIFY STORE INDEX          80209910
048C 0  7101            *       MDX     1 1         MODIFY WORD INDEX           80209920
048D 0  7201            *       MDX     2 1         MODIFY SHIFT INDEX          80209930
048E 0  70F0            *       MDX     CV12B       GO CONVERT NXT WORD         80209940
048F 0  7191            *       MOX     1 1         MODIFY FOR NXT GROUP        80209950
0490 0  70ED            *       MOX     CV12A       GO CONVERT NXT GROUP        80209960
                        *                                                       80209970
                        *                   PERFORM CHECKSUM                    80209980
                        *                                                       80209990
0491 0  62CA            *       LOX     2 -54       SET DATA INDEX              80210000
0492 00 C4000258        *       LD   L  CDCT        GET CARD COUNT              80210010
0494 00 86000AE1        CV12D   A    L2 IN+54       SUM DATA WORD               80210020
0496 0  4802            *       BSC     C           SKIP ON CARRY               80210030
0497 0  8810            *       A       K1          ADD 1                       80210040
0498 0  7201            *       MDX     2 1         SKIP WHEN DONE              80210050
0499 0  70FA            *       MDX     CV12D       CONTINUE                    80210060
049A 0  800D            *       A       K1          ADD 1                       80210070
049B 00 4C200790        *       BSC  L  CKER,Z      BRANCH ON WRONG CKSM        80210080
0490 00 65000000        CV12E   LOX  L1 0           RESTORE INDEX REG 1         80210090
049E 00 66000000        *       LOX  L2 0           RESTORE INDEX REG 2         80210100
04A1 00 67000000        *       LOX  L3 0           RESTORE INDEX REG 3         80210110
04A3 00 4C800478        *       BSC  I  CV12        RETURN TO USER              80210120
                        *                                                       80210130
04A5 0  1084            SHIFT   SLT     4           SHIFT 4 CONSTANT            80210140
04A6 0  1088            *       SLT     8           SHIFT 8 CONSTANT            80210150
04A7 0  108C            *       SLT     12          SHIFT 12 CONSTANT           80210160
04A8 0  0001            K1      DC      1           CONSTANT 1                  80210170
                        *                                                       80210180
                        *       THIS ROUTINE READS OFT OBJECT AND EOIT          80210190
                        *       CARDS.                                          80210200
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DIMAL LOADER/ORGANIZOR SECTIDN (CARO)

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                        *
04A9 0  0000    ROCD    DC      0           ENTRY POINT                  80210210
04AA 0  0819            XIO     SN          SENSE 1442 STATUS            80210220
04A8 00 4C04048B        BSC  L  W3305,E      BRANCH IF NOT READY          80210230
04AD 0  081A            XIO     RO          READ A CARD                  80210240
04AE 0  0815    RDCD1   XIO     SN          SENSE STATUS                 80210250
04AF 0  1801            SRA     1           POSITIDN BUSY BIT            80210260
04B0 00 4C04044F        BSC  L  RDCD1,E      SPIN WHILE BUSY              80210270
04B2 0  1808            SRA     11          POSITION LAST CD BIT         80210280
04B3 00 4C040480        BSC  L  LST,E        BRANCH IF LAST CARD          80210290
04B5 0  1801    RDCD2   SRA     1           POSITION ERROR BIT           80210300
04B6 00 4C04048F        BSC  L  RDER,E       BRANCH IF ERROR              80210310
04B8 0  080D            XIO     SNR         SENSE/RESET STATUS           80210320
04B9 00 4C8004A9        BSC  I  RDCD        RETURN TO USER               80210330
                        *                                                80210340
04BB 0  3305    W3305   DC      /3305       1442 NOT READY               80210350
04BC 0  70ED            MDX     RDCD+1      TRY AGAIN                    80210360
04BD 0  6804    LST     STX     LCD         SET LAST CARD SWITCH         80210370
04BE 0  70F6            MDX     RDCD2       CONTINUE                     80210380
04BF 0  0806    RDER    XIO     SNR         RESET STATUS                 80210390
04C0 0  3306    W3306   DC      /3306       1442 ERROR                   80210400
04C1 0  70E8            MDX     RDCD+1      REREAD CARD                  80210410
                        *                                                80210420
04C2 0  0000    LCD     DC      0           LAST CARD SWITCH             80210430
04C4    0000            BSS  E  0           ALIGN TO EVEN ADDRS          80210440
                        *                                                80210450
04C4 0  0000    SN      DC      0           SENSE 1442 IOCC              80210460
04C5 0  1700            DC      /1700                                    80210470
04C6 0  0000    SNR     DC      0           RESET/SENSE IOCC             80210480
04C7 0  1703            DC      /1703                                    80210490
04C8 0  0AAB    RD      DC      IN          READ 1442 IOCC               80210500
04C9 0  1600            DC      /1600                                    80210510
                        *                                                80210520
                        *   THIS ROUTINE CONVERTS 1 HEXIDECIMAL          80210530
                        *   CARD TO BINARY.                              80210540
                        *                                                80210550
04CA 0  0000    H8CV    DC      0           ENTRY POINT                  80210560
04CB 0  6909            STX   1 H8CV5+1     SAVE XR 1                    80210570
04CC 0  6A0A            STX   2 H8CV5+3     SAVE XR 2                    80210580
04CD 0  6B0B            STX   3 H8CV5+5     SAVE XR 3                    80210590
04CE 0  61AF            LDX   I -81         SET COLUMN INDEX             80210600
04CF 0  1010            SLA     16          CLEAR CONVERTED WORD         80210610
04D0 0  0029            STO     LOC         *STORE POINTER               80210620
04D1 0  6204    H8CV1   LDX   2 4           SET WORD XR                  80210630
04D2 0  7101            MDX   1 1           SKIP WHEN DONE               80210640
04D3 0  7008            MDX     H8CV6       BRANCH TO START CONV         80210650
04D4 00 65000000 H8CV5  LDX   L1 0          RESTORE XR 1                 80210660
04D6 00 66000000        LDX   L2 0          RESTORE XR 2                 80210670
04D8 00 67000000        LDX   L3 0          RESTORE XR 3                 80210680
04DA 00 4C8004CA        BSC   I H8CV        RETURN TO USER               80210690
04DC 0  1010    H8CV6   SLA     16          CLEAR CONVERSION             80210700
04DD 0  0C1D            STO     SAVE        *WORK LOCATIONS              80210710
04DE 0  1004    H8CV2   SLA     4           POSITION FOR NXT CHR         80210720
04DF 0  0D1C            STO     SAVE1       SAVE CONVERTED CHARS         80210730
04E0 0  6300            LDX   3 0           SET CHARACTER XR             80210740
04E1 00 65000AFC        LD    L1 IN+81      PICKUP HEX CULUMN            80210750
04E3 0  4828            BSC     +Z          SKIP IF NOT ALPHA            80210760
04E4 0  7309            MDX   3 9           ADD 9 FOR ALPHA CHAR         80210770
04E5 0  1003            SLA     3           REMOVE ZONE BITS             80210780
04E6 00 4C1804ED        BSC  L  H8CV4,+-    XFER IF CHAR = 0             80210790
04E8 0  7301    H8CV3   MDX   3 1           ADD 1 TO CHAR XR             80210800
04E9 00 4C2804ED        BSC  L  H8CV4,+Z    XFER IF DIGIT FOUND          80210810
04EB 0  1001            SLA     1           POSITION FOR NXT BIT         80210820
04EC 0  70FB            MDX     H8CV3       CHECK NEXT BIT               80210830
04ED 0  680D    H8CV4   STX   3 SAVE        STORE BIN CHARACTER          80210840
04EE 0  C00C            LD      SAVE        FETCH BIN CHARACTER          80210850
04EF 0  E80C            OR      SAVE1       ADD TO PREVIOUS CHRS         80210860
04F0 0  7101            MDX   1 1           ADD 1 TO HEX WORD XR         80210870
                                                                         80210880
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DIMAL LDADER/ORGANIZDR SECTION (CARDI

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04F1 0  72FF            MDX   2 -1          SUB 1 FROM COLUMN XR         80210890
04F2 0  70E8            MDX     H8CV2       GO FOR NEXT COLUMN           80210900
04F3 00 678004FA        LDX   I3 LOC        PICKUP STORE POINTER         80210910
04F5 00 D7000004        STO   L3 DUT        SET CONV WD IN OA            80210920
04F7 00 740104FA        MDX   L  LOC,1      ADD 1 TO POINTER             80210930
04F9 0  70D7            MDX     H8CV1       GO FOR NEXT WORD             80210940
                        *                                                80210950
04FA 0  0000    LOC     DC      0           STORAGE POINTER              80210960
04F8 0  0000    SAVE    OC      0           CONVERSION WORK              80210970
04FC 0  0000    SAVE1   DC      0           *LOCATIONS                   80210980
                        *                                                80210990
                        *   THIS ROUTINE DETERMINES IF THE CYLINDER      80211000
                        *   TO BE USED IS ENTERED IN THE CYLINDER        80211010
                        *   ERROR TABLE.IF A CYLINDER IS BAD,THE         80211020
                        *   NEXT SEQUENTIAL CYLINDER IS TESTED. THE      80211030
                        *   ROUTINE WILL ALSO MAKE ALLOWANCE FOR         80211040
                        *   CE CYLINDERS 90 THRU 110 AND 197 THRU        80211050
                        *   202.                                         80211060
                        *                                                80211070
04FD 0  0000    CYCK    DC      0           ENTRY POINT                  80211080
04FE 0  C024            LO      LSTCY       PICKUP LAST USED CYL         80211090
04FF 0  8027            A       K8          ADD 1 TO CYL NUMBER          80211100
0500 0  D023            STO     NXTCY       SET AS NEXT USED CYL         80211110
0501 0  F023            EOR     CY90        CHECK IF CYLINDER 90         80211120
0502 00 4C200508        BSC  L  CYCK1,Z     BRANCH IF NOT CYL 90         80211130
0504 0  C01F            LO      NXTCY       PICKUP NEXT USED CYL         80211140
0505 0  8022            A       KA8         ADJ TO SKIP C 90-110         80211150
0506 0  D01D            STO     NXTCY       SET AS NEXT USED CYL         80211160
0507 0  7009            MDX     CYCK2       GO CHECK CYL STATUS          80211170
0508 0  C018    CYCK1   LD      NXTCY       PICKUP NEXT USED CYL         80211180
0509 0  F01C            EOR     CY197       CHECK IF CYLNDR 197          80211190
050A 00 4C200511        BSC  L  CYCK2,Z     BRNCH IF NOT CYL 197         80211200
050C 00 44000788        BSI  L  LOG         GO LOG NO AVAIL CYLS         80211210
050E 0  09CA            DC      MSG1        MESSAGE ID                   80211220
050F 00 4C000336        BSC  L  LU36        GO TERMINATE LOAD OP         80211230
                        *                                                80211240
0511 0  C012    CYCK2   LD      NXTCY       PICKUP NEXT CYLINDER         80211250
0512 00 F400014E        EOR  L  CYTBL+6     CHECK IF HISTORY CYL         80211260
0514 00 4C1805ID        BSC  L  CYCK4,+-    BRANCH IF HIST CYL           80211270
0516 00 66800F8A        LOX   I2 HIST+3     SET XR = ERR TBL WC          80211280
0518 0  C008    CYCK5   LD      NXTCY       PICKUP CYLINDER              80211290
0519 00 F6000F8A        EOR   L2 HIST+3     CHECK IF BAD                 80211300
0518 00 4C20051F        BSC  L  CYCK3,Z     BRANCH IF OK                 80211310
051D 0  C006    CYCK4   LD      NXTCY       PICKUP CYLINDER              80211320
051E 0  70E0            MDX     CYCK+2      CYL BAD  SET FOR NXT         80211330
051F 0  72FF    CYCK3   MDX   2 -1          SKIP IF CYL CK COMPL         80211340
0520 0  70F7            MDX     CYCK5       LOOK AT NEXT ENTRY           80211350
0521 00 4C8004FD        BSC   I CYCK        RETURN TO USER               80211360
                        *                                                80211370
0523 0  0000    LSTCY   DC      0           LAST CYLINDER USED           80211380
0524 0  0000    NXTCY   DC      0           NEXT CYLINDER TO USE         80211390
0525 0  02D0    CY90    DC      /02D0       CYLINDER 90 ADDRESS          80211400
0526 0  0628    CY197   DC      /0628       CYLINDER 197 ADDRESS         80211410
0527 0  0008    K8      DC      8           CYLINDER INCR CONST          80211420
0528 0  00A8    KA8     OC      /A8         CYLINDER INCR CONST          80211430
                        *                                                80211440
                        *   THIS SECTION HANDLES THE EDIT CARDS. THE     80211450
                        *   PID IS CHECKED AGAINTS THE PID OF THE        80211460
                        *   LAST PROGRAM LOADED. IF THE PID IS           80211470
                        *   CORRECT,THEN THE CARD IS CHECKED FOR         80211480
                        *   CORRECT SEQUENCE.IF THE CARD IS OK,ITS       80211490
                        *   BINARY EQUIVALENT IS PLACED IN THE EDIT      80211500
                        *   TABLE                                        80211510
                        *                                                80211520
0529 0  0000    EDIT    DC      0           ENTRY POINT                  80211530
052A 00 67800568        LOX   I3 T8CT       SET XR = TABLE CNTR          80211540
052C 0  409D            BSI     H8CV        CONVERT HEX TO BINARY        80211550
052D 00 C4000004        LD    L OUT         PICKUP PID                   80211560
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052F 0  D039          STO     ENTID     SAVE FOR ENTRY INDCR      80211570
0530 0  F038          EOR     PCK       CK PIO = LAST PROGRM      80211580
0531 00 4C200558      BSC  L  EOIT3,Z   BRANCH ON WRONG PIO       80211590
                      *                                           80211600
0533 0  7301          MDX     3 1       INCR TABLE COUNTER        80211610
0534 00 C4000005      LD   L  OUT+1     PICKUP SEQUENCE NMBR      80211620
0536 0  F034          EOR     TERM      CHECK IF TERM CARD        80211630
0537 00 4C20053D      BSC  I  EOITI,Z   BRANCH IF NOT TERM        80211640
0539 0  1010          SLA     16        CLEAR A REG               80211650
053A 0  D02F          STO     SEQ       STORE C IN SEQ IND        80211660
053B 0  6202          LDX     2 2       SET MOVE XR =2            80211670
053C 0  7006          MDX     EOIT2     GO MOVE DATA TO T8L       80211680
                      *                                           80211690
0530 00 C4000005  EOIT1 LD   L  OUT+1     PICKUP SEQUENCE NMBR      80211700
053F 0  F02A          EOR     SEQ       CHECK FOR CORRECT NO      80211710
0540 0  F02C          EOR     KE000     CHECK FOR  ED  BITS       80211720
0541 00 4C200556      BSC  L  EOIT3,Z   BRANCH ON WRONG SEQ        80211730
0543 00 7401056A      MDX  L  SEQ,1     INCR SEQUENCE NUMBER      80211740
0545 00 66800006      LDX  I2 OUT+2     SET XR = CARD ENT NO      80211750
0547 0  7203          MDX     2 3       INCLUDE ID,SEQ NO,WC      80211760
0548 0  6100      EOIT2 LDX     1 0       SET XR                    80211770
0549 00 C5000004      LD   L1 CUT       PICKUP EDIT WORD          80211780
054B 00 D7000C3C      STO  L3 EOT8L     SET IN EDIT TABLE         80211790
054D 0  7101          MDX     1 1       INCREMENT MOVE INDEX      80211800
054E 0  7301          MDX     3 1       INCREMENT MOVE INDEX      80211810
054F 00 74010569      MDX  L  ENTID,1   COUNT NUMBER OF MOVE      80211820
0551 0  72FF          MDX     2 -1      SKIP WHEN ALL WD MVD      80211830
0552 0  70F6          MDX     EDIT2+1   GO MOVE NEXT WORD         80211840
                      *                                           80211850
0553 00 66800568      LDX  I2 T8CT      PICKUP ORIG ENT XR        80211860
0555 0  CC13          LD      ENTID     PICKUP PIO + MOVE CT      80211870
0556 00 D6000C3C      STO  L2 EOT8L     STORE IN EDIT TABLE       80211880
0558 0  6BCF          STX     3 T8CT    SAVE NEW ENTRY COUNT      80211890
0559 00 4C800529      BSC  I  EOIT      EXIT ROUTINE              80211900
                      *                                           80211910
055B 0  1010      EOIT3 SLA     16        CLEAR A REG               80211920
055C 0  D00D          STO     SEQ       STORE 0 IN SEQ            80211930
055D 0  C00E          LD      PCK       GET PROGRAM PIO           80211940
055E 0  1808          SRA     8         POSITION                  80211950
055F 00 D4000798      STO  L  EOPO      SET IN DELETE EDIT RTN    80211960
0561 00 44000760      BSI  L  DLED      GO DELETE ERROR EDIT      80211970
0563 00 440007BB      BSI  L  LOG       GO PRINT EDIT CD ERR      80211980
0565 0  DA11          OC      MSG7      MESSAGE IO                80211990
0566 0  3307      W3307 OC      /3307     EDIT CARD ERROR           80212000
0567 0  70FI          MDX     EOIT3-2   EXIT                      80212010
                      *                                           80212020
                      *              CONSTANTS                    80212030
                      *                                           80212040
0568 0  0001          T8CT  OC      1         EDIT T8L ENTRY COUNT  80212050
0569 0  0000          ENTID DC      0         INDICATOR LOC COUNT   80212060
056A 0  0000          SEQ   OC      0         EXPECTED CARD SEQ NO  80212070
056B 0  FFFF          TERM  OC      /FFFF     CONSTANT HEX FFFF     80212080
056C 0  0000          PCK   OC      0         LAST PROGRAM PID      80212090
056D 0  E000          KE000 OC      /E000     SEQ NUMBER CONSTANT   80212100
                      *                                           80212110
                      *     ROUTINE OIRC IS USED TO UPDATE THE    80212120
                      *     LOCATION DIRECTORY TO INCLUDE THE     80212130
                      *     PROGRAM JUST LOADED.                  80212140
                      *                                           80212150
056E 0  0000          DIRC  OC      0         ENTRY POINT           80212160
056F 00 67800599      LDX  13 ORCT      SET XR TO NXT POSITN      80212170
0571 0  C029          LD      LONS      PICKUP SECTOR COUNT       80212180
0572 0  1003          SLA     3         POSITION                  80212190
0573 0  E828          OR      LOP       OR IN PROGRAM PIO         80212200
0574 00 EC00025F      OR   L  IMG       OR IN IMAGE INDICATR      80212210
0576 0  D023          STO     OIRW      SAVE ACCUM                80212220
0577 0  C025          LD      LONC      PICKUP CYLINDER CNT       80212230
0578 0  1001          SLA     1         POSITION                  80212240
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0579 0  E820          OR      OIRW      OR IN PREV DATA           80212250
057A 00 07000AFB      STO  L3 ORT8L     SET IN LOC DIRECTORY      80212260
057C 0  7301          MDX     3 1       INCR POSITION XR          80212270
057D 0  C020          LD      LOD       PICKUP PROG ORG ADRS      80212280
057E 00 07000AF8      STO  L3 ORT8L     SET IN LOCATION DIR       80212290
0580 0  7301          MDX     3 1       INCR POSITION XR          80212300
0581 00 66800590      LDX  I2 LONC      SET XR = CYL COUNT        80212310
0583 00 6500059F      LDX  L1 LOSC      SET XR = CYL STORAGE      80212320
0585 0  C100      DIRC1 LD      1 0       PICKUP CYLINDER ADRS      80212330
0586 00 07000AFB      STO  L3 ORT8L     SET IN LOC DIRECTORY      80212340
0588 0  7301          MDX     3 1       INCREMENT POSITN XR       80212350
0589 0  7101          MDX     1 1       INCR CYLINDER LOC         80212360
058A 0  72FF          MDX     2 -1      SKIP WHEN ALL CYL CK      80212370
0588 0  70F9          MDX     DIRC1     GO CHECK NEXT ENTRY       80212380
                      *                                           80212390
058C 0  C015      DIRC2 LD      LDXA      PICKUP TRANSFER ADRS      80212400
0580 00 D7000AF8      STO  L3 ORT8L     SET IN LOC DIRECTORY      80212410
058F 0  7301          MDX     3 1       INCREMENT POS XR          80212420
0590 0  6808          STX     3 ORCT    SAVE POSITION XR          80212430
0591 0  6308          LDX     3 8       SET XR 3 = 8              80212440
0592 0  1010          SLA     16        CLEAR A REG               80212450
0593 00 0700059A  DIRC3 STO  L3 LONS-1    CLEAR PROGRAM WORDS       80212460
0595 0  73FF          MDX     3 -1      SKIP WHEN DONE            80212470
0596 0  70FC          MDX     DIRC3     CONTINUE                  80212480
0597 00 4C80056E      BSC  I  DIRC      EXIT ROUTINE              80212490
                      *                                           80212500
0599 0  0000      ORCT  OC      0         TABLE POSITION CTR        80212510
059A 0  0000      OIRW  OC      0         SAVE LOCATION             80212520
                      *                                           80212530
                      *     LOCATION DIRECTORY CONSTANTS.  THESE  80212540
                      *     WORDS ARE FILLED IN AS EACH PROGRAM   80212550
                      *     IS WRITTEN ON DISK.                   80212560
                      *                                           80212570
0598 0  0000      LONS  OC      0         NUMBER OF SECTORS         80212580
059C 0  0000      LDP   OC      0         PROGRAM ID                80212590
0590 0  0000      LONC  OC      0         NUMBER OF CYLINDERS       80212600
059E 0  0000      LOD   OC      0         PROGRAM ORG ADDRESS       80212610
059F 0  0000      LOSC  OC      0         STARTING CYL ADDRESS      80212620
05A0 0  0000          OC      0         NEXT CYL ADDRESS          80212630
05A1 0  0000          OC      0         NEXT CYL ADDRESS          80212640
05A2 0  0000      LDXA  OC      0         PROG XFER ADDRESS         80212650
                      *                                           80212660
                      *     THIS ROUTINE WILL WRITE ON DISK,EITHER 80212670
                      *     THE LOCATION DIRECTORY OR THE EDIT T8L 80212680
                      *     ACCORDING TO THE CALLING SEQUENCE     80212690
                      *                                           80212700
05A3 0  0000      T8OUT OC      0         ENTRY POINT               80212710
05A4 00 44000360      BSI  L  ORDY      CHECK DISK READY          80212720
05A6 00 44000368      BSI  L  SKHM      INSURE DISK HOME          80212730
05A8 00 C48005A3      LD   I  T8OUT     PICKUP SECTOR ADDRS       80212740
05AA 0  0011          STO     T8D2+4    SET IN READ CALL          80212750
05AB 0  0015          STO     T8D3+4    SET IN WRITE CALL         80212760
05AC 0  1803          SRA     3         REMOVE SECTOR BITS        80212770
05AD 0  0002          STO     T801+2    SET IN SEEK CALL          80212780
                      *                                           80212790
05AE 00 44000381  T801  BSI  L  SKOT      SEEK TO PROPER CYL        80212800
0580 0  0000          OC      0         SEEK COUNT                80212810
                      *                                           80212820
0581 00 740105A3      MDX  L  T8OUT,1   MODIFY INPUT              80212830
0583 00 C48005A3      LD   I  T8OUT     PICKUP OUTPUT AREA        80212840
05B5 0  0005          STO     T802+3    SET IN READ CALL          80212850
05B6 0  0009          STO     T803+3    SET IN WRITE CALL         80212860
05B7 0  6303          LDX     3 3       XR = NMBR EDIT SECTORS    80212870
                      *                                           80212880
0588 00 44000393  T802  BSI  L  ORD       GO READ SID               80212890
05BA 0  0001          OC      1         WORD COUNT                80212900
05BB 0  0000          OC      0         OUTPUT AREA               80212910
05BC 0  0000          OC      0         SECTOR ADDRESS            80212920
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DIMAL LOADER/ORGANIZOR SECTION (CARD)

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                        *                                                       80212930
058D 00 440003CC    TB03  BSI  L  DWRT       GO WRITE DISK                    80212940
058F 0  0141              DC       321        WORD COUNT                       80212950
05C0 0  0000              DC       0          OUTPUT AREA                      80212960
05C1 0  0000              DC       0          SECTOR ADDRESS                   80212970
                        *                                                       80212980
05C2 0  C0F8              LD       T802+3     PICKUP OUTPUT AREA               80212990
05C3 0  F016              EOR      T8CK       CHECK IF DIRECT TBL              80213000
05C4 00 4C1805D6          BSC  L   TB04,+-    BRANCH IF DIR TBL                80213010
05C6 0  73FF              MDX   3 -1          SKIP WHEN 3 SECTORS READ         80213020
05C7 0  7001              MDX      *+1        CONTINUE                         80213030
05C8 0  700D              MDX      TB04       EXIT                             80213040
05C9 0  C0F1              LD       T802+3     PICKUP I/O AREA                  80213050
05CA 00 E400031D          A    L   K320       ADD 320                          80213060
05CC 0  D0EE              STO      T802+3     STORE IN CALL                    80213070
05CD 00 740105BC          MDX  L   T802+4,1   UPDATE SECTOR BITS               80213080
05CF 0  C0F0              LD       T8D3+3     PICKUP I/O AREA                  80213090
05D0 00 E4000310          A    L   K320       ADD 320                          80213100
05D2 0  D0ED              STO      TB03+3     STORE IN CALL                    80213110
05D3 00 740105C1          MDX  L   T803+4,1   UPDATE SECTOR BITS               80213120
05D5 0  70E2              MDX      TB02       GO WRITE 2ND SECTOR              80213130
                        *                                                       80213140
05D6 00 740105A3    TB04  MDX  L   TBOUT,1    MODIFY FOR RETURN                80213150
05D8 00 4C8005A3          BSC  I   TBOUT      RETURN TO USER                   80213160
                        *                                                       80213170
05DA 0  0AF9        T8CK  DC       DRT8L-2    TABLE CHECK CONSTANT             80213180
                        *                                                       80213190
                        *       THIS ROUTINE WILL INPUT FROM DISK,THE           80213200
                        *       LOCATION DIRECTORY AND EDIT TABLE.              80213210
                        *                                                       80213220
05DB 0  0000        TBLIN DC       0          ENTRY POINT                      80213230
05DC 00 44000360          BSI  L   DRDY       CHECK DISK READY                 80213240
05DE 00 44000368          BSI  L   SKHM       INSURE DISK HOME                 80213250
05E0 00 C4000140          LD   L   CYTBL+5    PICKUP TBL CYLINDER              80213260
05E2 0  D014              STO      TBLI3+4    SET IN READ CALL                 80213270
05E3 0  1803              SRA      3          POSITION SEEK COUNT              80213280
05E4 0  D002              STO      TBLI1+2    SET IN SEEK CALL                 80213290
                        *                                                       80213300
05E5 00 44000381    TBLI1 BSI  L   SKDT       GO SEEK TO TBL CYL               80213310
05E7 0  0000              DC       0          SEEK COUNT                       80213320
                        *                                                       80213330
05E8 00 C400031D          LD   L   K320       GET MOVE WORD COUNT              80213340
05EA 0  D00E              STO      TBLI3+6    SET IN LOAD INDEX INSTR          80213350
05EB 0  C030              LD       K321       GET READ WORD COUNT              80213360
05EC 0  D006              STO      TBLI3+2    SET IN READ CALL                 80213370
                        *                                                       80213380
05ED 0  E103        T8LI2 LDX   1  3           SET INDEX TO 3                   80213390
05EE 0  E930              STX   1  T8ISW      SET TABLE IN SW TO 3             80213400
05EF 0  61FC              LDX   1  -4         SET PASS INDEX                   80213410
05F0 00 C500061C          LD   L1  T8LCN+4    GET IO AREA ADDRESS              80213420
05F2 0  D003              STO      TBLI3+3    SET IN READ CALL                 80213430
                        *                                                       80213440
05F3 00 44000393    TBLI3 BSI  L   DRD        GO READ DISK                     80213450
05F5 0  0141              DC       321        WORD COUNT                       80213460
05F6 0  0000              DC       0          I/O AREA                         80213470
05F7 0  0000              DC       0          SECTOR ID                        80213480
                        *                                                       80213490
05F8 00 E6000000          LDX  L2  0          SET MOVE XR                      80213500
05FA 00 E78005F6          LDX  13  T8LI3+3    SET I/O AREA XR                  80213510
05FC 0  C302        TBL14 LD    3  2          PICKUP WORD                      80213520
05FD 0  E300              STD   3  0          REPOSITION                       80213530
05FE 0  7301              MDX   3  1          INCREMENT I/O AREA               80213540
05FF 0  72FF              MDX   2  -1         SKIP WHEN ALL WDS MV             80213550
0600 0  70F8              MDX      T8LI4      MOVE NEXT WORD                   80213560
0601 00 740105F7          MDX  L   TBLI3+4,1  MODIFY SECTOR ID                 80213570
0603 0  7101              MDX   1  1          SKIP IF LAST READ                80213580
0604 0  7008              MDX      TBLI5      CHECK FOR LAST SECT              80213590
0605 00 C4000AF8          LD   L   DRT8L      PICKUP ENTRY COUNT               80213600
```


DIMAL LOADER/ORGANIZOR SECTION (CARD)

```
0607 0  D091              STO      ORGT  *    STORE IN INDICATOR               80213610
0608 00 C4C03C3C          LD   L   EDT8L      PICKUP ENTRY COUNT               80213620
060A 00 D4C03568          STO  L   T8CT       STORE IN INDICATOR               80213630
060C 00 44000368          BSI  L   SKHM       RETURN DISK TO HOME              80213640
060E 00 4C8005DB          BSC  I   T8LIN      EXIT ROUTINE                     80213650
                        *                                                       80213660
0610 00 74FF061F    T8LI5 MDX  L   T8ISW,-1   SKIP IF 3 SECTORS READ           80213670
0612 0  70DD              MDX      T8LI2+3    GO READ NEXT SECTOR              80213680
0613 0  C0C9              LD       K200       GET MOVE WORD COUNT              80213690
0614 0  D0E4              STO      T8LI3+6    SET IN LOAD INDEX INSTR          80213700
0615 0  C0C8              LD       K201       GET READ WORD COUNT              80213710
0616 0  D0DE              STO      T8LI3+2    SET IN READ CALL                 80213720
0617 0  7CD8              MDX      T8LI2+3    GO READ LAST SECTOR              80213730
                        *                                                       80213740
0618 0  0AF8        T8LCN DC       DRT8L      LOC DIRECTORY ADDRS              80213750
0619 0  0C3C              DC       EDT8L      EDIT TABLE ADDRS                 80213760
061A 0  0D7C              DC       EDT8L+320  2ND EDIT TABLE ADDRS             80213770
061B 0  0EBC              DC       EDT8L+640  3RD EDIT TABLE ADDRESS           80213780
                        *                                                       80213790
061C 0  0141        K321  DC       321        CONSTANT 321                     80213800
061D 0  00C8        K200  DC       200        CONSTANT 200                     80213810
061E 0  00C9        K201  DC       201        CONSTANT 201                     80213820
061F 0  0000        T8ISW DC       0          TABLE IN SWITCH                  80213830
                        *                                                       80213840
                        *       THIS ROUTINE BUILDS THE OUTPUT MESSAGE          80213850
                        *       AND PRINTS THE CONTENTS OF THE LOCATION         80213860
                        *       DIRECTORY                                       80213870
                        *                                                       80213880
0620 0  0000        DRLST DC       0          ENTRY POINT                      80213890
                        *                                                       80213900
0621 00 44000788          BSI  L   LOG        GO PRINT HEADING                 80213910
0623 0  0A43              DC       MSG0A      MESSAGE ADDRESS                  80213920
                        *                                                       80213930
0624 00 44000788          BSI  L   LOG        GO PRINT 2ND HEADING             80213940
0626 0  0A50              DC       MSG0B      MESSAGE ADDRESS                  80213950
                        *                                                       80213960
0627 0  6300              LDX   3  13         SET OUTPUT MESSAGE               80213970
0628 00 6F000004          STX  L3  OUT        #WORD COUNT TO 13                80213980
062A 0  1010              SLA      16         CLEAR ACC                        80213990
062B 00 D7C00004    ORLS1 STO  L3  OUT        CLEAR OUTPUT AREA                80214000
062D 0  73FF              MDX   3  -1         SKIP WHEN DONE                   80214010
062E 0  70FC              MDX      ORLS1      CLEAR NEXT LOCATION              80214020
                        *                                                       80214030
062F 00 65800599          LDX  I1  DRCT       SET XR = TBL ENT NO              80214040
0631 0  71FF              MDX   1  -1         ADJ COUNT,SKIP IF NO ENTRY       80214050
0632 0  7001              MDX      *+1        CONTINUE WITH ROUTINE            80214060
0633 0  7045              MDX      ORLS6      EXIT  NO ENTRIES                 80214070
0634 00 66C00AFC          LDX  L2  DRT8L+1    SET XR = TBL ADDRESS             80214080
0636 0  10A0        ORLS2 SLT      32         CLEAR A AND Q                    80214090
0637 0  C200              LD    2  0          PICKUP PID ENTRY                 80214100
0638 0  1888              SRT      8          SAVE RH WORD                     80214110
0639 00 E4C008A2          S10  L   HEXWD      SET IN CONVERSION RT             80214120
063B 00 44000888          BS1  L   HEXCV      CONVERT PID TO 43 CD             80214130
063D 00 C4000881          LD   L   HEXCD+1    PICKUP CONVERTED WRD             80214140
063F 00 D4000008          STO  L   OUT+4      STORE IN MESSAGE                 80214150
0641 0  1010              SLA      16         CLEAR ACC                        80214160
0642 0  1065              SLT      5          PICKUP SECTOR COUNT              80214170
0643 00 D40008F6          STO  L   WORD       SET IN DEC CONV RTN              80214180
0645 00 440008C4          BSI  L   HEDEC      CONVERT HEX TO DEC               80214190
0647 00 C40008F9          LD   L   CODE+1     PICKUP CONV SECT CNT             80214200
0649 00 D4000011          STO  L   OUT+13     SET IN MESSAGE                   80214210
064B 0  1010              SLA      16         CLEAR ACC                        80214220
064C 0  1082              SLT      2          BRING IN CYL COUNT               80214230
064D 0  D001              STO      *+1        SET IN LDX INSTRUCTN             80214240
064E 00 67000000          LDX  L3  0          SET XR 3 = CYL COUNT             80214250
0650 0  7202              MDX   2  2          ADD 2 TO SEARCH XR               80214260
0651 0  71FE              MDX   1  -2         MODIFY ENTRY XR                  80214270
0652 0  C200        ORLS3 LD    2  0          PICKUP SECTOR ADDRES             80214280
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```
0653 0  1883          SRT    3          SAVE SECTOR BITS          80214290
0654 00 D40008F6      STO  L WORD       SET IN OEC CONV RTN       80214300
0656 00 44000804      BSI  L HEOEC      CONVERT CYL TO OEC        80214310
0658 0  1010          SLA    16         CLEAR ACC                 80214320
0659 0  1083          SLT    3          PICKUP SECTOR BITS        80214330
065A 00 D40008AA      STO  L HEXWD      SET IN 43 CODE CONV       8D214340
065C 00 CC0008F8      LDD  L CODE       PICKUP CONVERTED CYL      80214350
065E 00 DC00090A      STD  L OUT+6      SET IN MESSAGE            80214360
0660 00 440008B8      BSI  L HEXCV      CONVERT TO 43 CODE        80214370
0662 00 C40008BJ      LD   L HEXCO+1    PICKUP CONVERTED WRD      80214280
0664 00 D400000E      STO  L OUT+10     SET IN MESSAGE            80214390
                      *                                           80214400
0666 00 4400078B      BSI  L LOG        GO PRINT T8L ENTRY        80214410
0668 0  0004          OC     OUT        MESSAGE ADDRESS           8D214420
0669 0  6807          STX    3 ORLS5+1  SAVE XR 3                 8D214430
066A 0  630D          LOX    3 13       SET XR FOR CLEAR OP       80214440
066B 0  1010          SLA    16         CLEAR ACC                 8D214450
066C 00 D7000004 ORLS4 STO  L3 OUT       CLEAR MESSAGE AREA        8D214460
066E 0  73FF          MDX    3 -1       SKIP WHEN DONE            8D214470
066F 0  70FC          MDX    ORLS4      CLEAR NEXT LOCATION       80214480
0670 00 67000000 ORLS5 LOX  L3 0         RESTORE XR 3              80214490
0672 0  7201          MDX    2 1        SEARCH XR + 1             80214500
0673 0  71FF          MDX    1 -1       ENTRY XR - 1              80214510
0674 0  73FF          MDX    3 -1       SKIP IF CYL COUNT 0       80214520
0675 0  70DC          MDX    ORLS3      GO LIST NXT CYL ENT       80214530
0676 0  7201          MDX    2 1        SEARCH XR + 1             80214540
0677 0  71FF          MDX    1 -1       SKIP IF TABLE LISTED      8D214550
0678 0  7080          MDX    ORLS2      GO LIST NXT DIR ENT       80214560
0679 00 4C800620 ORLS6 BSC  I DRLST      RETURN TO USER            80214570
                      *                                           80214580
                      *     THIS ROUTINE BUILDS THE OUTPUT MESSAGE 80214590
                      *     AND PRINTS THE CONTENTS OF THE EDIT    80214600
                      *     TABLE.                                 80214610
                      *                                           8D214620
067B 0  0000 EDLST    DC     0          ENTRY POINT               80214630
067C 00 4400078B      BSI  L LOG        GO PRINT HEADING          80214640
067E 0  0A5E          OC     MSGOC      MESSAGE ADDRESS           80214650
                      *                                           8D214660
067F 00 65800568      LOX    I1 TBCT    SET XR = TBL ENT NO       80214670
0681 0  71FF          MDX    1 -1       ADJ COUNT,SKIP IF NO ENTRY 80214680
0682 0  7001          MDX    *+1        CONTINUE WITH ROUTINE     80214690
0683 0  702F          MDX    EDLS3      EXIT  NO ENTRIES          80214700
0684 00 66000C3D      LOX    L2 EDT8L+1 SET SRCH XR TO START      80214710
0686 00 67000140 EDLS1 LDX   L3 320     SET XR TO CLR OUT AR      8D214720
0688 0  1010          SLA    16         CLEAR ACC                 80214730
0689 00 07000003      STO    L3 OUT-1   CLEAR OUTPUT AREA         80214740
068B 0  73FF          MDX    3 -1       SKIP WHEN DONE            8D214750
068C 0  70FC          MDX    *-4        CLEAR NEXT LOCATION       8D214760
068D 0  6303          LDX    3 3        SET XR = TO WORD CT       80214770
068E 00 6F000004      STX    L3 OUT     SET WD CT IN MESSAGE      8021478D
0690 00 67000035      LDX    L3 /0035   SET XR = TO 43 CO E       80214790
0692 00 6F000007      STX    L3 OUT+3   SET E IN MESSAGE          8D2148D0
0694 00 67000008      LDX    L3 OUT+4   SET OUTPUT XR = 4         8D214810
0696 0  C200          LD     2 0        PICKUP CARD ENT CT        80214820
0697 0  1008          SLA    8          REMOVE PIO                8D214830
0698 0  1808          SRA    8          REPOSITION COUNT          80214840
0699 0  001B          STO    CTLSW      SAVE COUNT IN SWITCH      8D214850
069A 0  71FF EDLS2    MDX    1 -1       XR 1 -1                   80214860
069B 0  7201          MDX    2 1        SEARCH INDEX +1           80214870
069C 0  C200          LD     2 D        PICKUP EDIT WORD          80214880
069D 00 D40003AA      STO  L HEXWO      SET WD IN CONV RTN.       8D214890
                      *                                           80214900
069F 00 44000888      BSI  L HEXCV      CONVERT WD TO 43 CD       80214910
                      *                                           80214920
06A1 00 CC000880      LOD  L HEXCD      PICKUP CONVERTED WD       8D214930
06A3 0  0300          STO    3 D        SET LH IN MESSAGE         80214940
06A4 0  7301          MDX    3 1        ADJUST OUTPUT INDEX       80214950
06A5 D  1090          SLT    16         POSITION RH WORD          80214960
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06A6 0  D300          STO    3 D        SET RH IN MESSAGE         8021497D
06A7 0  7302          MDX    3 2        ADJUST OUTPUT INDEX       80214980
06A8 00 74030004      MDX  L OUT,3      ADJUST MSG WORD CNT       80214990
06AA 00 74FF0685      MDX  L CTLSW,-1   SKIP IF MESSAGE CMPL      80215000
06AC 0  70ED          MDX    EDLS2      CONT MSG MAKEUP           80215010
                      *                                           80215020
06AD 00 44000788      BSI  L LOG        GO PRINT EDIT CARD        8D215030
06AF D  D004          DC     OUT        MESSAGE ADDRESS           80215040
                      *                                           8D215050
0680 0  7201          MDX    2 1        ADJUST SEARCH INDEX       80215060
0681 0  71FF          MDX    1 -1       SKIP IF TABLE PRINTO      80215070
0682 0  7003          MDX    EDLS1      GO PRINT NEXT CARD        80215080
                      *                                           8D215090
06B3 00 4C800678 EDLS3 BSC  I EDLST      RETURN TO USER            80215100
                      *                                           80215110
0685 D  000D CTLSW    OC     0          CONTROL SWITCH            8021512D
                      *                                           8D21513D
                      *     THIS ROUTINE SETS UP TO WRITE THE      80215140
                      *     LOCATION DIRECTORY ON THE DISK.        80215150
                      *                                           80215160
0686 0  00C0 WRTLD    OC     0          ENTRY POINT               8D21517D
06B7 00 C4000599      LD   L DRCT       PICKUP T8L ENT COUNT      80215180
06B9 00 D4000AF8      STO  L DRT8L      SET AS T8L WORD 1         80215190
06BB 00 C400014D      LD   L CYT8L+5    PICKUP TABLE CYLNDER      80215200
06B0 0  0002          STO    WRTL1+2    SET IN CALL               80215210
                      *                                           80215220
06BE D0 440005A3 WRTL1 BSI  L T8OUT      GO WRITE DIRECTORY        80215230
06C0 0  0000          DC     0          SECTOR ADDRESS            80215240
06C1 C  0AF9          DC     DRT8L-2    DIRECTORY ADDRESS         8D215250
                      *                                           80215260
06C2 DD 4C800686      BSC  I WRTLD      EXIT ROUTINE              8D215270
                      *                                           80215280
                      *     THIS ROUTINE SETS UP TO WRITE THE      8D215290
                      *     EDIT TABLE ON THE DISK                 80215300
                      *                                           80215310
06C4 0  0000 WRTED    OC     0          ENTRY POINT               80215320
06C5 00 C4000568      LD   L TBCT       PICKUP T8L ENT COUNT      80215330
06C7 00 D4000C3C      STO  L EDT8L      SET AS T8L WORD 1         80215340
06C9 00 C4000140      LD   L CYT8L+5    PICKUP TABLE CYLNDER      80215350
06CB 0  D004          STO    WRTE1+2    SET IN CALL               80215360
06CC 00 740106D0      MDX  L WRTE1+2,1  SET FOR SECTUR 1          80215370
                      *                                           80215380
06CE D0 440005A3 WRTE1 BSI  L T8OUT      GO WRITE EDIT TABLE       80215390
06D0 0  D000          OC     0          SECTOR ADDRESS            80215400
06D1 D  0C3A          OC     EDT8L-2    EDIT TABLE ADDRESS        80215410
                      *                                           80215420
06D2 00 4C800C4       BSC  I WRTED      EXIT ROUTINE              80215430
                      *                                           80215440
                      *     THIS ROUTINE SETS UP TO PUNCH THE COLD 80215450
                      *     STAR CARDS.                            80215460
                      *                                           80215470
06D4 0  0000 PCSC     DC     0          ENTRY POINT               80215480
                      *                                           8D215490
06D5 00 44C00788      BSI  L LOG        COMNO TO READY 1442       80215500
06D7 D  0A67          DC     MSGDD      MESSAGE ADDRESS           80215510
                      *                                           80215520
06D8 D  3308 W3308    DC     /33D8      RDY 1442 WITH 8LANKS      80215530
06D9 00 740106EC      MDX  L PCSW,1     SET CONTROL SWITCH        80215540
06D8 D0 C4000148      LD   L CYT8L      PICKUP LOADER CYL         8D215550
06DD 0  1005          SLA    5          POSITION SEEK COUNT       80215560
06DE 0  0004          STO    PCSC2+2    SET IN CALL               80215570
06DF D0 740106E3 PCSC1 MDX  L PCSC2+2,1 SET R-H OF CALL           8D215580
                      *                                           8D215590
06E1 DD 44C0090F PCSC2 BSI  L PCOUT      GO PUNCH CALLS            8D215600
06E3 0  0000          DC     0          SEEK COUNT + INDICTR      8D215610
                      *                                           80215620
06E4 0  C007          LD     PCSW       PICKUP CONTROL SWITC      80215630
06E5 00 4C1806EA      BSC  L PCSC3,+-   BRANCH IF 0               80215640
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06E7 0  1010            SLA     16          CLEAR ACC                   B0215650
06E8 0  D003            STO     PCSW        STORE 0 IN CTRL SW          B0215660
06E9 0  70F5            MDX     PCSC1       SET TO PUNCH NXT SET        B0215670
06EA 00 4CB00604  PCSC3 BSC  I  PCSC        EXIT RDUTINE                B0215680
                  *                                                     B0215690
06EC 0  0000      PCSW  DC      0           PASS CONTRDL SWITCH         B0215700
                  *                                                     B0215710
                  *     THIS ROUTINE IS USED TO DELETE THE              B0215720
                  *     PROGRAM SPECIFIED IN THE DATA ENTRY             B0215730
                  *     SWITCHES.                                       B0215740
                  *                                                     B0215750
06E0 0  0000      OLPGM DC      0           ENTRY POINT                 B0215760
06EE 00 44000783        BSI  L  LDG         PRINT  ENTER PID            B0215770
06F0 0  0A1B            DC      MSGB        MESSAGE ADDRESS             B0215780
                  *                                                     B0215790
06F1 0  3309      W3309 DC      /3309       ENTER PID TO DELETE         B0215800
                  *                                                     B0215810
06F2 00 0C000260        XIO  L  DESW        SENSE DATA ENTRY SWS        B0215820
06F4 0  1008            SLA     8           REMOVE ANY H-O BITS         B0215830
06F5 0  1608            SRA     8           REPOSITION PID              B0215840
06F6 00 4C1806EE        BSC  L  DLPGM+1,+-  BRANCH IF PID 0             B0215850
06F8 00 D4000798        STD  L  EDPD        SAVE PID FOR DLT EDT        B0215860
06FA 0  D033            STO     LDPD        SAVE PID FOR DLT PGM        B0215870
06FB 0  6101      DLPO  LDX  1  1           INITIALIZE XR 1             B0215880
06FC 0  6201            LDX  2  1           INITIALIZE XR 2             B0215890
                  *                                                     B0215900
06FD 00 C5000AF8  OLP1  LD   L1 DRTBL       PICKUP DIRECTRY ENTY        B0215910
06FF 0  18D3            RTE     19          SAVE PID                    B0215920
0700 0  160F            SRA     14          POSITION CYLINDER CT        B0215930
0701 0  D003            STO     DLP2+1      SET CYL CT IN MOX           B0215940
0702 0  D00A            STO     DLP3+I      SET CYL CT IN MOX           B0215950
0703 0  7205            MDX  2  3           ADJUST XR 2 TO LOOK         B0215960
0704 00 76000000  DLP2  MDX  L2 0           *AT NXT DIRECTRY ETY        B0215970
0706 0  1010            SLA     16          CLEAR ACC                   B0215980
0707 0  1088            SLT     11          BRING PID INTO ACC          B0215990
0708 0  F025            EDR     LDPO        CK IF PID TO DELETE         B0216000
0709 00 4C180719        BSC  L  DLP5,+-     BRANCH IF PROPER PID        B0216010
070B 0  7103            MDX  1  3           ADJUST XR 1 TO LOOK         B0216020
070C 00 75000000  DLP3  MDX  L1 0           *AT NXT DIRECTRY ETY        B0216030
070E 0  6A20            STX  2  LDCT        SET XR 2 IN WRK LOC         B0216040
070F 0  C01F            LO      LOCT        PICKUP XR 2 SETTING         B0216050
0710 00 F4000599        EOR  L  DRCT        CK IF SEARCH COMPLET        B0216060
0712 00 4C2006FD        BSC  L  DLP1,Z      BRANCH IF NOT DONE          B0216070
                  *                                                     B0216080
0714 0  404B      DLP4  BSI       OLED      GO DELETE EDIT              B0216090
0715 0  40A0            BSI     WRTLD       WRT LOC DIRCT ON DISK       B0216100
0716 0  40AD            BSI     WRTED       WRT EDIT TBL ON DISK        B0216110
0717 00 4C8006ED        BSC  I  OLPGM       EXIT RDUTINE                B0216120
                  *                                                     B0216130
0719 0  6A15      OLP5  STX  2  LDCT        SET XR2 IN WORK LOC         B0216140
071A 0  C014            LD      LDCT        PICKUP XR 2 SETTING         B0216150
0718 00 F4000599        EOR  L  DRCT        CHECK IF DELETE COMP        B0216160
0710 00 4C200727        BSC  L  DLP6,Z      BRANCH IF NOT COMP          B0216170
071F 00 C4000599        LO   L  DRCT        PICKUP DIR ENTRY CT         B0216180
0721 0  90EB            S       DLP3+1      ADJUST COUNT FOR            B0216190
0722 00 D4000599        STO  L  DRCT        *DELETED PROGRAM            B0216200
0724 00 74F00599        MOX  L  ORCT,-3     *ENTRY                      B0216210
0726 0  70D4            MOX     DLPO        INSURE PID DELETED          B0216220
                  *                                                     B0216230
0727 00 C4000AFB  OLP6  LD   L2 DRTBL       PICKUP TBL ENTRY            B0216240
0729 00 D5000AF8        STO  L1 ORTBL       STORE IN VACATED LOC        B0216250
072B 0  7201            MDX  2  1           ADJUST XR 2                 B0216260
072C 0  7101            MOX  1  1           ADJUST XR 1                 B0216270
072D 0  70E8            MDX     DLP5        GO CHECK IF DONE            B0216280
                  *                                                     B0216290
072E 0  0000      LOPD  OC      0           PID TO DELETE               B0216300
072F 0  0000      LDCT  OC      0           WORK LOCATION               B0216310
                  *                                                     B0216320
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                  *     THIS ROUTINE IS USED TO CHANGE THE              B0216330
                  *     CONTENTS OF THE EDIT TABLE.                     B0216340
                  *                                                     B0216350
0730 0  0000      CHGEO OC      0           ENTRY POINT                 B0216360
0731 00 44000788        BSI  L  LOG         PRINT  READY 42 EDIT        B0216370
0733 0  0A31            OC      MSG9        MESSAGE ADDRESS             B0216380
W330A OC      /330A       ROY 42 WITH EDIT CARDS                      B0216390
0734 0  330A            SLT     32          CLEAR ACC                   B0216400
0735 0  10A0            STD     EDPD        CLEAR PID INDICATOR         B0216410
0736 0  D064      CHGO  LO   L  LCO         PICKUP LAST CARD SW         B0216420
0737 00 C40004C2        BSC  L  CHG4,Z      BRANCH IF DN                B0216430
0739 00 4C200756        8SI  L  RDCD        GO READ A CARD              B0216440
073B 00 440004A9        LD   L  IN          PICKUP 1ST CARD WORD        B0216450
073D 00 C4000AAB        EDR     KB1         CHECK IF EDIT CARD          B0216460
073F 0  F01F            BSC  L  CHG1,+-     BRANCH IF EDIT CARD         B0216470
0740 00 4C180746  *                                                     B0216480
0742 0  4078            BSI     LDG         PRINT NOT EDIT CARD         B0216490
0743 0  0A77            DC      MSGOE       MESSAGE ADDRESS             B0216500
0744 0  330B      W330B OC      /330B       NOT EDIT CARD               B0216510
0745 0  70F1            MDX     CHGO        TRY AGAIN                   B0216520
                  *                                                     B0216530
0746 00 440004CA  CHG1  8SI  L  H8CV        CONVERT CARD TO BIN         B0216540
0748 00 C4000004        LD   L  OUT         PICKUP PID                  B0216550
074A 00 D400056C        STD  L  PCK         SAVE FOR DELETE RTN         B0216560
074C 0  1808            SRA     8           POSITION                    B0216570
074D 0  804D            CMP     EDPD        CK IF SAME AS LAST          B0216580
074E 0  7004            MOX     CHG3        NEW PID                     B0216590
074F 0  7003            MDX     CHG3        NEW PID                     B0216600
0750 00 44000529  CHG2  BSI  L  EDIT        SAME PID  UPDATE TBL        B0216610
0752 0  70E4            MDX     CHGO        CONTINUE                    B0216620
                  *                                                     B0216630
0753 0  D047      CHG3  STO     EDPD        SAVE NEW PID                B0216640
0754 0  400B            BSI     DLED        DELETE DLD TBL ENTRY        B0216650
0755 0  70FA            MDX     CHG2        GO UPDATE TABLE             B0216660
                  *                                                     B0216670
0756 0  1010      CHG4  SLA     16          CLEAR ACC                   B0216680
0757 00 D40004C2        STD  L  LCD         CLEAR LAST CARD SW          B0216690
0759 00 4400067B        BSI  L  EDLST       LIST EDIT TABLE             B0216700
075B 00 440006C4        BSI  L  WRTED       WRITE EDIT DN DISK          B0216710
075D 00 4C800730        BSC  I  CHGED       EXIT RDUTINE                B0216720
                  *                                                     B0216730
075F 0  B100      KB1   DC      /B100       EDIT CARD CK CONSTNT        B0216740
                  *                                                     B0216750
                  *     THIS RDUTINE IS USED TO DELETE EDIT             B0216760
                  *     TABLE CONTENTS.THE EDIT TO BE DELETED           B0216770
                  *     IS DETERMINED BY THE PID ENTERED IN THE         B0216780
                  *     DATA ENTRY SWITCHES DN A DELETE PROGRAM         B0216790
                  *     DPTION,DR BY THE PID IN THE EDIT CARD           B0216800
                  *     DN A CHANGE EDIT DPTION.                        B0216810
                  *                                                     B0216820
0760 0  0000      DLED  DC      0           ENTRY PDINT                 B0216830
0761 00 C4000C3C        LD   L  EDTBL       GET TBL ENTRY COUNT         B0216840
0763 0  1801            SRA     1           REMDVE BIT 15               B0216850
0764 00 4C980760        BSC  I  DLED,+-     EXIT IF NO ENTRIES          B0216860
0766 0  6100            LDX  1  0           INITIALIZE XR 1             B0216870
0767 0  6200            LDX  2  0           INITIALIZE XR 2             B0216880
0768 00 C5000C3D  DLED1 LD   L1 EDTBL+1     PICKUP INDICATOR WORD       B0216890
076A 0  18C8            RTE     8           POSITION PID                B0216900
0768 0  F02F            EDR     EDPD        CK IF PID TO DELETE         B0216910
076C 00 4C180781        BSC  L  DLED3,+-    BRANCH IF PROPER PID        B0216920
076E 0  1010            SLA     16          CLEAR OUT PID               B0216930
076F 0  10B8            SLT     8           RETRIEVE CARD ENT CT        B0216940
0770 0  D002            STD     DLED2+1     SET IN MODIFY XR INS        B0216950
0771 0  D003            STO     DLED2+3     SET IN MODIFY XR INS        B0216960
0772 00 75000000  DLED2 MDX  L1 0           INCREMENT XR 1 AND          B0216970
0774 00 76000000        MDX  L2 0           *XR 2 BY CARD ENT CT        B0216980
0776 0  7101            MDX  1  1           ADJUST XR 1                 B0216990
0777 0  7201            MDX  2  1           ADJUST XR 2                 B0217000
```

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0778 0  6A23            STX   2 CTCK      SET XR 2 IN WORK LOCATION   80217010
0779 0  C022            LD      CTCK      GET CONTENTS OF XR2         80217020
077A 00 840004A8        A     L KI        ADD 1                       80217030
077C 00 F4000568        EOR   L T8CT      CHECK IF END OF TABLE       80217040
077E 00 4C980760        BSC   I DLED,+-   EXIT IF END OF TABLE        80217050
0780 0  70E7            MDX     OLE01     CONTINUE CHECK              80217060
                *                                                     80217070
0781 0  1010    DLED3   SLA     16        REMOVE PIO                  80217080
0782 0  1088            SLT     8         RETRIEVE CARD ENT CT        80217090
0783 0  0001            STO     DLED4+1   SET IN MODIFY XR INS        80217100
0784 00 76000000 DLED4  MDX   L2 0        MODIFY XR 2 BY CD CT        80217110
0786 0  6A15            STX   2 CTCK      SET XR 2 IN WORK LOC        80217120
0787 0  C014            LD      CTCK      PICKUP XR 2 SETTING         80217130
0788 00 F4000568        EOR   L T8CT      CHECK IF ALL LOC CKD        80217140
078A 00 4C200794        BSC   L DLE05,Z   BRANCH IF NOT DONE          80217150
                *                                                     80217160
078C 00 C4000568        LO    L T8CT      PICKUP TABLE COUNT          80217170
078E 0  90F6            S       OLED4+1   SUB CARD ENTRY COUNT        80217180
078F 00 D4000568        STO   L T8CT      UPDATE TABLE COUNT          80217190
0791 00 74FF0568        MDX   L T8CT,-1   ADJ COUNT FOR CTL WD        80217200
0793 0  70D2            MDX     DLED+6    CK IF ALL PID ENTRIES       80217210
                *                                                     80217220
                *                                                     80217230
0794 0  7201    DLE05   MDX   2 1         INCREMENT XR 2              80217240
0795 00 C6000C3D        LD    L2 EDT8L+1  OVERLAY DELETED ENTRY       80217250
0797 00 D5000C3D        STO   L1 EDT8L+1  *WITH REMAIN OF TABLE       80217260
0799 0  7101            MDX   1 1         INCREMENT XR 1              80217270
079A 0  70E8            MDX     DLED4+2   CONTINUE                    80217280
                *                                                     80217290
079B 0  0000    EDPD    DC      0         PIO ENTRY TO DELETE         80217300
079C 0  0000    CTCK    DC      0         WORK LOCATION               80217310
                *                                                     80217320
                *       THIS SUBROUTINE IS ENTERED WHEN A CHECK       80217330
                *       SUM ERROR IS DETECTED DURING CARD IMAGE       80217340
                *       TO BINARY CONVERSION. ONE OF TWO CORREC-      80217350
                *       TIVE PROCEDURES MAY BE FOLLOWED.              80217360
                *                                                     80217370
                *       1. THE CARD WHICH CAUSED THE CHECKSUM         80217380
                *          ERROR SHOULD BE CHECKED FOR ERRONEOUS      80217390
                *          PUNCHES AND AN OUT OF SEQUENCE CONDITION.  80217400
                *          IF THE CARD APPEARS TO BE OK, IT MAY       80217410
                *          BE REENTERED PRECEEDING THE REMAINDER      80217420
                *          OF THE PROGRAM DECK.                       80217430
                *       2. IF THE CHECKSUM ERROR REOCCURS USING       80217440
                *          PROCEDURE 1, OR IF THE CARD CAUSING        80217450
                *          THE CHECKSUM IS FOUND TO BE BAL AND        80217460
                *          NOT EASILY CORRECTABLE,THE PROGRAM         80217470
                *          BEING LOADED MAY BE DELETED BY RE-         80217480
                *          MOVING THE REMAINDER OF THE PROGRAM DECK,  80217490
                *          FROM THE 1442 HOPPER,MAKING THE 1442       80217500
                *          READY WITH THE NEXT PROGRAM TO BE          80217510
                *          LOADED,SETTING SENSE/PROGRAM SWITCH        80217520
                *          7 AND PRESSING THE START BUTTON.           80217530
                *                                                     80217540
079D 0  401D    CKER    BSI     LOG       GO PRINT CKSUM ERROR        80217550
079E 0  0A9D            OC      MSG11     MESSAGE ADDRESS             80217560
079F 0  330C    W330C   OC      /330C     CHECKSUM ERROR              80217570
07A0 00 0C0001C0        XIO   L SNSW      READ SNS/PGM SWITCHES       80217580
07A2 0  1007            SLA     7         POSITION BIT 7              80217590
07A3 00 4C100201        BSC   L LO10,-     BRANCH IF NOT ON            80217600
                *                                                     80217610
                *       BYPASS PRESENT PROGRAM LOAD.                  80217620
                *                                                     80217630
07A5 00 C400059F RST    LD    L LOSC      PICKUP CYL ADDRESS          80217640
07A7 00 4C1807B9        BSC   L CKEXT,+-  BRANCH IF ZERO              80217650
07A9 00 D4000258        STO   L CYINO     SAVE TO USE                 80217660
07AB 00 E40001C2        AND   L KFFF8     REMOVE SECTOR BITS          80217670
07AD 00 D4000524        STO   L NXTCY     SET IN CYLINDER INO         80217680
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07AF 00 44000368        BSI   L SKHM      SEEK DISK TO HOME           80217690
                *                                                     80217700
                *       CLEAR LOC DIRECTORY CONSTANTS.                80217710
                *                                                     80217720
0781 0  6308            LDX     3 8       SET CLEAR INDEX             80217730
0782 0  1010            SLA     16        CLEAR ACC                   80217740
0783 00 0700059A CKER1  STO   L3 LDNS-1   ZERO DIRECTORY CONST        80217750
0785 0  73FF            MDX     3 -1      SKIP WHEN DONE              80217760
0786 0  70FC            MDX     CKER1     CLEAR NEXT LOCATION         80217770
0787 00 D400029F        STO   L XFCT      CLEAR CARD IMAGE COUNTER    80217780
0789 00 4C0001F4 CKEXT  BSC   L LO4       GO INPUT NEXT PROGRAM       80217790
                *                                                     80217800
                ***********************************************       80217810
                *                LOG ROUTINE                  *       80217820
                ***********************************************       80217830
                *                                                     80217840
078B 0  0000    LOG     DC      0                             SE      80217850
                *                                                     80217860
078C 0  6B1A    LOG01   STX     3 LOG06+1 SAVE IX 3                   80217870
078D 0  6A18            STX     2 LOG06+3 SAVE INDEX 2                80217880
078E 00 C400014F        LO    L CYT8L+7   PICKUP OUTPUT DEV IN 0       80217890
07C0 00 4C1807DE        BSC   L TWRTR,+-  BRANCH IF TYPEWRITER        80217900
                *                                                     80217910
07C2 00 C4800788        LO    1 LOG       GET MESSAGE ADDRESS         80217920
07C4 0  D053            STO     PRWRT     SET IN IOCC                 80217930
                *                                                     80217940
07C5 0  084E    LOG02   XIO     PRSNS     CHECK PRINTER READY         80217950
07C6 00 4C0407CC        BSC   L W330D,E   BRANCH IF NOT READY         80217960
07C8 0  1801            SRA     1                                     80217970
07C9 00 4C0407CE        BSC   L W330E,E   BRANCH IF BUSY              80217980
07CB 0  7004            MDX     LOG05     READY AND NOT BUSY          80217990
                *                                                     80218000
07CC 0  3300    W330D   DC      /330D     1443 NOT READY              80218010
07CD 0  70F7            MDX     LOG02     CHECK AGAIN                 80218020
                *                                                     80218030
07CE 0  330E    W330E   OC      /330E     1443 BUSY                   80218040
07CF 0  70F5            MDX     LOG02     CHECK AGAIN                 80218050
                *                                                     80218060
07D0 0  0847    LOG05   XIO     PRWRT     OUTPUT MESSAGE              80218070
                *                                                     80218080
0701 0  0844            XIO     PRSN      CHECK FOR OP COMPLT         80218090
0702 0  1002            SLA     2                                     80218100
0703 0  4810            BSC     -                                     80218110
07D4 0  70FC            MDX     *-4                                   80218120
0705 0  083E            XIO     PRSNS     RESET OSW                   80218130
                *                                                     80218140
                *               PRINTING COMPLETE                     80218150
                *                                                     80218160
0706 00 67000000 LOG06  LDX   L3 0        RESTORE IX 3                80218170
0708 00 66000000        LDX   L2 0        RESTORE INDEX 2             80218180
070A 00 74010788        MDX   L LOG,1     BUMP RETURN                 80218190
                *                                                     80218200
070C 00 4C800788        BSC   1 LOG       RETURN TO USER          SX  80218210
                *                                                     80218220
070E 0  1010    TWRTR   SLA     16                                    80218230
070F 0  D032            STO     WRDSW                                 80218240
07E0 0  0839            XIO     TWSNS     CHECK IF TYPEWRITER         80218250
07E1 0  1005            SLA     5         READY                       80218260
07E2 0  180F            SRA     15                                    80218270
07E3 00 4C1807E7        BSC   L TWR01,+-                             80218280
                *                                                     80218290
07E5 0  330F    W330F   OC      /330F     1053/1816 NOT READY         80218300
07E6 0  70F9            MDX     TWRTR+2                               80218310
                *                                                     80218320
07E7 0  C029    TWR01   LO      TWRTO     CARRAIGE RETURN AND         80218330
07E8 0  002A            STO     10ARA     LINE SPACE TO 10 ARA        80218340
                *                                                     80218350
07E9 0  0832            XIO     TWWRT     CARG RETURN/LINE SP         80218360
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                        *
07EA 0  082F            XIO     TWSNS       HANG TILL NOT BUSY          80218370
07E8 0  1808            SRA     11                                      80218380
07EC 0  4804            BSC     E                                       80218390
07ED 0  70FC            MDX     *-4                                     80218400
                        *                                               80218410
07EE 00 C4800788        LD   I  LOG         GET WORD COUNT LOC          80218420
07F0 0  D001            STO     *+1         SET IN LDX INSTRUCTN        80218430
07F1 00 66800000        LDX  I2 0           SET  XR 2 TO WORD CT        80218440
07F3 0  6301            LDX  3  1           BYPASS 1443 WORD COUNT      80218450
07F4 00 C4800788        LD   I  LOG         GET MESSAGE ADDRESS         80218460
07F6 0  D061            STO     TWRO2+1                                 80218470
                        *                                               80218480
07F7 00 C7000000 TWRO2  LD   L3 0           GET WORD TO PRINT           80218490
07F9 0  D056            STO     CODWD       SET IN CONVERT ROUTINE      80218500
                        *                                               80218510
                        ********************************************    80218520
07FA 0  4023            BSI     CODCV       BRANCH TO CONVERT RTN       80218530
                        ********************************************    80218540
                        *                                               80218550
07F8 0  C054            LD      CODWD       FETCH CONVERTED WORD        80218560
07FC 0  D016            STO     IOARA                                   80218570
                        *                                               80218580
                        *                   OUTPUT A CHARACTER          80218590
                        *                                               80218600
07FD 0  081E    XIOWR XIO       TWWRT       WRITE CHARACTER             80218610
                        *                                               80218620
07FE 0  0818    XIOSN XIO       TWSNS       HANG ON BUSY                80218630
07FF 0  1808            SRA     11                                      80218640
0800 0  4804            BSC     E                                       80218650
0801 0  70FC            MDX     XIOSN       BUSY                        80218660
                        *                                               80218670
                        *                   CHECK IF 1ST 1/2 WORD       80218680
                        *                                               80218690
0802 0  C00F            LD      WRDSW       GET 1/2 WORD SWITCH         80218700
0803 0  4804            BSC     E                                       80218710
0804 0  7006            MDX     TWRO3       GO SET UP NEXT WORD         80218720
                        *                                               80218730
                        *                   SET UP FOR 2ND 1/2 WORD     80218740
                        *                                               80218750
0805 0  C000            LD      IOARA                                   80218760
0806 0  1008            SLA     8           POSITION 2ND 1/2 WD         80218770
0807 0  D008            STO     IOARA                                   80218780
0808 00 74010812        MDX  L  WRDSW,1     BUMP WORD SWITCH            80218790
080A 0  70F2            MDX     XIOWR       GO WRITE 2ND 1/2 WD         80218800
                        *                                               80218810
                        *                   SET UP FOR NEXT WORD        80218820
                        *                                               80218830
0808 0  7301    TWRO3   MDX  3  1           NEXT WORD INDEX             80218840
080C 00 74010812        MDX  L  WRDSW,1     BUMP WORD SWITCH            80218850
080E 0  72FF            MDX  2  -1          SKIP IF MESSAGE CMPL        80218860
080F 0  70E7            MDX     TWRO2       GO GET NEXT WORD            80218870
0810 0  70C5            MDX     LOG06       EXIT                        80218880
                        *                                               80218890
                        *                   LOG  CONSTANTS              80218900
                        *                                               80218910
0811 0  8193    TWRTO   DC      /8103       LINE SP/CARRAIGE RTN        80218920
0812 0  0000    WRDSW   DC      0           1/2 WORD SWITCH             80218930
0813 0  0000    IOARA   DC      0           OUTPUT AREA                 80218940
                        *                                               80218950
0814    0000            BSS  E  0                                       80218960
                        *                                               80218970
0814 0  0000    PRSNS   DC      /0000       PRINTER  SENSE IOCC         80218980
0815 0  3701            DC      /3701                                   80218990
0816 0  0000    PRSN    DC      0           NON RESET SENSE             80219000
0817 0  3700            DC      /3700                                   80219010
0818 0  0000    PRWRT   DC      /0000       PRINTER  WRITE IOCC         80219020
0819 0  3500            DC      /3500                                   80219030
                                                                        80219040
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081A 0  0C00    TWSNS   DC      /0000       TYPEWTR  SENSE IDCC         80219050
0818 0  0F03            DC      /0F03                                   80219060
081C 0  0813    TWWRT   DC      IOARA       TYPEWTR  WRITE IOCC        80219070
081D 0  0902            DC      /0902                                   80219080
                        *                                               80219090
                        ********************************************    80219100
                        *                1443 CODE TO 1816/1053   *     80219110
                        *                CODE CONVERSION ROUTINE  *     80219120
                        ********************************************    80219130
                        *                                               80219140
081E 0  0000    CODCV   DC      0                                   SE  80219150
081F 0  6928            STX  1  CODC4+1     SAVE INDEX REGS             80219160
0820 0  6A29            STX  2  CODC4+3                                 80219170
0821 0  6B2A            STX  3  CODC4+5                                 80219180
0822 0  DB33            STD     MQ2         SAVE A AND Q                80219190
                        *                                               80219200
0823 0  1010            SLA     16          CLEAR LEFT HALF WORD        80219210
0824 0  D02C            STO     LHIND       *INDICATOR                  80219220
0825 0  6300            LDX  3  0                                       80219230
                        *                                               80219240
0826 0  C029    CODC1   LD      CODWD       GET WORD TO CONVERT         80219250
0827 0  1390            SRT     16          SET IN Q                    80219260
0828 0  C028            LD      LHIND                                   80219270
0829 0  4820            BSC     Z           SKIP IF LEFT HALF           80219280
082A 0  1088            SLT     8           POSITION RIGHT HALF         80219290
                        *                                               80219300
0828 0  1010            SLA     16                                      80219310
082C 0  1084            SLT     4           ZONE TO ACCUM               80219320
082D 0  D024            STO     CODOO                                   80219330
082E 00 65800852        LDX  I1 CODOO       IX 1 = ZONE                 80219340
                        *                                               80219350
0830 0  1010            SLA     16                                      80219360
0831 0  1084            SLT     4           DIGIT TO ACCUM              80219370
0832 0  001F            STO     CODOO                                   80219380
0833 00 66800852        LDX  I2 CODOO       IX 2 = DIGIT                80219390
                        *                                               80219400
0835 00 C5000858        LD   L1 ZONE        GET ZONE TABLE ADDRS        80219410
0837 0  D001            STO     CODC2+1     SET IN CONVERSION WD        80219420
                        *                                               80219430
0838 00 C6000000 CODC2  LD   L2 0           GET CONVERTED CODE          80219440
083A 00 D7000853        STO  L3 CODO1                                   80219450
                        *                                               80219460
083C 0  C014            LD      LHIND                                   80219470
083D 00 4C200843        BSC  L  CODC3,Z     BRNCH IF RIGHT HALF         80219480
083F 00 74010851        MDX  L  LHIND,1                                 80219490
0841 0  7301            MDX  3  1                                       80219500
0842 0  70E3            MDX     CODC1       GO CONVERT RIGHT HLF        80219510
                        *                                               80219520
0843 0  C00F    CODC3   LD      CODD1       PACK CONVERTED CODES        80219530
0844 0  1008            SLA     8                                       80219540
0845 0  E80E            OR      CODO2                                   80219550
0846 0  D009            STO     CODWD                                   80219560
                        *                                               80219570
0847 00 65000000 CODC4  LDX  L1 0           RESTORE INDEX REGS          80219580
0849 00 66000000        LDX  L2 0                                       80219590
0848 00 67000000        LDX  L3 0                                       80219600
0840 0  C808            LOD     AQ2         RESTORE A AND Q             80219610
                        *                                               80219620
084E 00 4C80081E        BSC  1  CODCV       RETURN TO USER          SX  80219630
                        *                                               80219640
                        *                                               80219650
                        *                   CONSTANTS                   80219660
                        *                                               80219670
0850 0  0000    CODWD   DC      0           WORD LOCATION               80219680
0851 0  0000    LHIND   DC      0           LEFT HALF INDICATOR         80219690
0852 0  0000    CODOO   DC      0           WORK AREA                   80219700
0853 0  0000    CODO1   DC      0           CONVERTED LH CHARACT        80219710
0854 0  0000    CODO2   DC      0           CONVERTED RH CHARACT        80219720
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0856    0000            BSS  E  0                                    80219730
0856 0  0000       AQ2  DC      0          A AND Q STORAGE           80219740
0857 0  0000            DC      0                                    80219750
                   *                                                80219760
                   *                                                80219770
                   *                  1443 TO 1816/1053  CODE       80219780
                   *                  CONVERSION TABLES             80219790
                   *                                                80219800
0858 0  085C       ZONE DC      ZONEN      NO ZONE                   80219810
0859 0  0867            DC      ZONE1      0 ZONE                    80219820
085A 0  0872            DC      ZONE2      11 ZONE                   80219830
085B 0  087C            DC      ZONE3      12 ZONE                   80219840
                   *                                                80219850
085C 0  0021       ZONEN DC     /0021      SPACE                     80219860
085D 0  00FC            DC     /00FC      1                         80219870
085E 0  00D8            DC     /00D8      2                         80219880
085F 0  00DC            DC     /000C      3                         80219890
0860 0  00F0            DC     /00F0      4                         80219900
0861 0  00F4            DC     /00F4      5                         80219910
0862 0  00D0            DC     /00D0      6                         80219920
0863 0  00D4            DC     /0004      7                         80219930
0864 0  00E4            DC     /00E4      8                         80219940
0865 0  00E0            DC     /00E0      9                         80219950
0866 0  00C4            DC     /00C4      0                         80219960
0867 0  0000       ZONE1 DC     0                                    80219970
0868 0  0000            DC     0                                    80219980
0869 0  009A            DC     /009A      S                         80219990
086A 0  009E            DC     /009E      T                         80220000
086B 0  0082            DC     /0082      U                         80220010
086C 0  0086            DC     /0086      V                         80220020
086D 0  0092            DC     /0092      W                         80220030
086E 0  0096            DC     /0096      X                         80220040
086F 0  00A6            DC     /00A6      Y                         80220050
0870 0  00A2            DC     /00A2      Z                         80220060
0871 0  0021            DC     /0021      SPACE                     80220070
0872 0  0000       ZONE2 DC     0                                    80220080
0873 0  007E            DC     /007E      J                         80220090
0874 0  005A            DC     /005A      K                         80220100
0875 0  005E            DC     /005E      L                         80220110
0876 0  0072            DC     /0072      M                         80220120
0877 0  0076            DC     /0076      N                         80220130
0878 0  0052            DC     /0052      O                         80220140
0879 0  0056            DC     /0056      P                         80220150
087A 0  0066            DC     /0066      Q                         80220160
087B 0  0062            DC     /0062      R                         80220170
087C 0  0000       ZONE3 DC     0                                    80220180
087D 0  003E            DC     /003E      A                         80220190
087E 0  001A            DC     /001A      B                         80220200
087F 0  001E            DC     /001E      C                         80220210
0880 0  0032            DC     /0032      D                         80220220
0881 0  0036            DC     /0036      E                         80220230
0882 0  0012            DC     /0012      F                         80220240
0883 0  0016            DC     /0016      G                         80220250
0884 0  0026            DC     /0026      H                         80220260
0885 0  0022            DC     /0022      I                         80220270
0886 0  0086            DC     /0086      0 ERROR                   80220280
0887 0  0000            DC     /0000      PERIOD                    80220290
                   *                                                80220300
                   ************************************************ 80220310
                   *                  HEXADECIMAL TO 1443 CODED*    80220320
                   *                  HEXADECIMAL CONVERSION   *    80220330
                   *                  ROUTINE                  *    80220340
                   ************************************************ 80220350
                   *                                                80220360
0888 0  0000       HEXCV DC     0                                SE 80220370
0889 0  6A1A            STX    2 HEXC2+1  SAVE INDEX 2 AND 3        80220380
088A 0  6B18            STX    3 HEXC2+3                            80220390
088B 0  D926            STD      AQ       SAVE A AND Q              80220400
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088C 0  6204            LDX    2 4        CONVERSION INDEX          80220410
                   *                                                80220420
088D 0  C01C            LD       HEXWD    GET WORD TO CONVERT       80220430
088E 0  1890            SRT      16       SET A IN Q                80220440
088F 0  1010            SLA      16                                 80220450
0890 0  1084       HEXC1 SLT      4        GET CHARACTER             80220460
0891 0  D001            STO      HEXC1+3                            80220470
0892 00 67000000        LDX  L3 0         SET CODE TABLE INDEX      80220480
                   *                                                80220490
0894 00 C7000884        LD   L3 CODEH     GET CODED CHARACTER       80220500
0896 00 D60008AA        STO  L2 HEX00-1   AND SAVE                  80220510
0898 0  1010            SLA      16                                 80220520
                   *                                                80220530
0899 0  72FF            MDX    2 -1       CHECK IF DONE             80220540
089A 0  70F5            MDX      HEXC1                              80220550
                   *                                                80220560
0898 0  C012            LD       HEX00+3  PACK CODED WORDS          80220570
089C 0  1008            SLA      8                                  80220580
089D 0  E80F            OR       HEX00+2                            80220590
089E 0  D011            STO      HEXCD                              80220600
089F 0  C00C            LD       HEX00+1                            80220610
08A0 0  1008            SLA      8                                  80220620
08A1 0  E809            OR       HEX00                              80220630
08A2 0  D00E            STO      HEXCD+1                            80220640
                   *                                                80220650
08A3 00 66000000   HEXC2 LDX  L2 0         RESTORE INDEX             80220660
08A5 00 67000000        LDX  L3 0                                    80220670
08A7 0  C80A            LDD      AQ       RESTORE A AND Q           80220680
                   *                                                80220690
08A8 00 4C800888        BSC  I   HEXCV    RETURN TO USER         SX 80220700
                   *                                                80220710
                   *                  CONSTANTS                     80220720
                   *                                                80220730
08AA 0  0000       HEXWD OC     0        WORD TO CONVERT           80220740
08A8 0  0000       HEX00 DC     0        *                         80220750
08AC 0  0000            DC      0        * UNPACKED CODED          80220760
08AD 0  0000            DC      0        * WORD                    80220770
08AE 0  0000            DC      0        *                         80220780
                   *                                                80220790
0880    0000            BSS  E  0                                  80220800
                   *                                                80220810
0880 0  0000       HEXCD DC     0        * PACKED CODED WORD       80220820
0881 0  0000            DC      0        *                         80220830
0882 0  0000       AQ    DC     0        A AND Q STORAGE           80220840
0883 0  0000            DC      0                                  80220850
                   *                                                80220860
                   *                CONVERSION TABLE                80220870
                   *                                                80220880
0884 0  000A       CODEH DC     /000A      0                         80220890
0885 0  0001            DC     /0001      1                         80220900
0886 0  0002            DC     /0002      2                         80220910
0887 0  0003            DC     /0003      3                         80220920
0888 0  0004            DC     /0004      4                         80220930
0889 0  0005            DC     /0005      5                         80220940
088A 0  0006            DC     /0006      6                         80220950
0888 0  0007            DC     /0007      7                         80220960
088C 0  0008            DC     /0008      8                         80220970
088D 0  0009            DC     /0009      9                         80220980
088E 0  0031            DC     /0031      A                         80220990
088F 0  0032            DC     /0032      B                         80221000
08C0 0  0033            DC     /0033      C                         80221010
08C1 0  0034            DC     /0034      D                         80221020
08C2 0  0035            DC     /0035      E                         80221030
08C3 0  0036            DC     /0036      F                         80221040
                   *                                                80221050
                   *                                                80221060
                   *                HEX TO  DECIMAL CONVERSION      80221070
                   *                ROUTINE                         80221080
```

```
                        *                                                       80221090
08C4 0  0000            HEOEC DC      0                                   SE    80221100
08C5 0  6820                  STX   3 HEDE4+1       SAVE 1X 3                 80221110
08C6 0  6A21                  STX   2 HEDE4+3       SAVE INDEX 2              80221120
08C7 0  6922                  STX   1 HEDE4+5       SAVE INDEX 1              80221130
08C8 0  D831                  STD     AQ1           SAVE A AND Q              80221140
                        *                                                       80221150
08C9 00 65000906              LDX   L1 OPARA        OUTPUT AREA INDEX         80221160
08CB 00 660008FC              LDX   L2 CVT8L        CONVERSION TABLE 1X       80221170
                        *                                                       80221180
08CD 00 67000901        HEDE1 LDX   L3 CDTBL        CODE TABLE INDEX          80221190
                        *                                                       80221200
08CF 0  C200                  LD    2 0             SET CONVERSION            80221210
0800 0  D026                  STD     CONV          CONSTANT IN WORK ARA      80221220
                        *                                                       80221230
08D1 0  C024            HEDE2 LD      WORD          CHECK WORD AGAINST        80221240
08D2 0  9024                  S       CONV          CONVERSION CONSTANT       80221250
08D3 00 4C2808DC              BSC   L HEDE3,+Z       BRANCH IF MINUS           80221260
                        *                                                       80221270
0805 0  8821                  A       CONV          RESTORE NUMBER            80221280
08D6 0  D01F                  STD     WORD                                    80221290
                        *                                                       80221300
0807 0  C01F                  LD      CONV          SET UP FOR NEXT           80221310
08D8 0  8200                  A     2 0             CHECK                     80221320
08U9 0  D010                  STD     CONV                                    80221330
                        *                                                       80221340
08DA 0  7301                  MDX   3 1             CODE TABLE INUEX + 1      80221350
08DB 0  70F5                  MDX     HEOF2                                   80221360
                        *                                                       80221370
                        *                   NEGATIVE RESULT                     80221380
                        *                                                       80221390
08DC 0  8200            HEDE3 A     2 0           RESTORE LAST NUMBER         80221400
08UU 0  D018                  STO     WORD                                    80221410
                        *                                                       80221420
08UE 0  C360                  LO    3 0           SET 1443 CODE IN            80221430
08UF 0  0100                  STD   1 0           OUTPUT AREA                 80221440
                        *                                                       80221450
08E0 0  7101                  MUX   1 1           OUTPUT AREA INDEX +1        80221460
08E1 0  7201                  MDX   2 1           CONVERSION TBL 1X +1        80221470
                        *                                                       80221480
08E2 0  C200                  LD    2 0                                       80221490
08E3 00 4C2008CD              BSC   L HEDE1,Z                                 80221500
                        *                                                       80221510
08E5 00 67000000        HEDE4 LDX   L3 0            RESTORE INDEX REG 3       80221520
08E7 00 66000000              LDX   L2 0            RESTORE INDEX 2           80221530
08E9 00 65000000              LDX   L1 0            RESTORE INDEX 1           80221540
08EB 0  C80E                  LDD     AQ1           RESTORE A AND Q           80221550
                        *                                                       80221560
08EC 0  C01F                  LO      OPARA         GET 1ST CODE AND          80221570
08EU 0  1008                  SLA     8             PACK WITH 2ND             80221580
08EE 0  E81U                  OR      OPARA+1                                 80221590
08EF 0  D008                  STD     CODE                                    80221600
08F0 0  C01C                  LD      OPARA+2       GET 3RD CODE AND          80221610
08F1 0  1008                  SLA     8             PACK WITH 4TH             80221620
08F2 0  E81B                  DR      OPARA+3                                 80221630
08F3 0  D005                  STO     CODE+1                                  80221640
                        *                                                       80221650
                        *                                                       80221660
08F4 00 4C8008C4              BSC   I HEDEC         RETURN TO USER        SX  80221670
                        *                                                       80221680
                        *                   CONVERSION CONSTANTS                80221690
                        *                                                       80221700
08F6 0  0000            WORD  OC      0             WORK AREA                 80221710
08F7 0  0000            CONV  OC      0             WORK AREA                 80221720
                        *                                                       80221730
08F8    0000                  BSS   E 0                                       80221740
                        *                                                       80221750
08F8 0  0000            CODE  OC      0             PACKED WORDS 1 AND 2      80221760
```



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08F9 0  0000                  DC      0             PACKED WORDS 3 AND 4      80221770
08FA 0  0000            AQ1   DC      0             A AND Q STORAGE           80221780
08FB 0  0000                  DC      0                                       80221790
                        *                                                       80221800
08FC 0  03E8            CVT8L DC      /03E8         1000                      80221810
08F0 0  0064                  DC      /0064         100                       80221820
08FE 0  000A                  DC      /000A         10                        80221830
08FF 0  0001                  DC      /0001         1                         80221840
0900 0  0000                  DC      /0000         0                         80221850
                        *                                                       80221860
0901 0  000A            CDT8L DC      /000A         0                         80221870
0902 0  0001                  DC      /0001         1                         80221880
0903 0  0002                  DC      /0002         2                         80221890
0904 0  0003                  DC      /0003         3                         80221900
0905 0  0004                  DC      /0004         4                         80221910
0906 0  0005                  DC      /0005         5                         80221920
0907 0  0006                  DC      /0006         6                         80221930
0908 0  0007                  DC      /0007         7                         80221940
0909 0  0008                  DC      /0008         8                         80221950
090A 0  0009                  DC      /0009         9                         80221960
                        *                                                       80221970
0908 0  0000            OPARA DC      0             OUTPUT WORK AREA          80221980
090C 0  0000                  DC      0                                       80221990
090D 0  0000                  DC      0                                       80222000
090E 0  0000                  DC      0                                       80222010
                        *                                                       80222020
                        ********************************************************80222030
                        *                                                       80222040
                        *           CALLING SEQUENCE FOR BOOTSTRAP              80222050
                        *                                                       80222060
                        *     BSI   L PCOUT       PCH CARDS OUT                 80222070
                        *     OC     /XXON                                      80222080
                        *                                                       80222090
                        *           XX- NUMBER OF TRACKS TO SEEK IN HEX         80222100
                        *           N- INDICATOR NUMBER, 1 IS L                 80222110
                        *                                2 IS S                 80222120
                        *                                                       80222130
                        ********************************************************80222140
090F 0  0000            PCOUT OC      /0000         RETURN ADDRESS            80222150
0910 00 C480090F              LD    I PCOUT         GET SEEKS AND NUMBER      80222160
0912 0  D04E                  STO     PCSL3                                   80222170
0913 0  1008                  SLA     8                                       80222180
0914 0  D048                  STO     PCSLO                                   80222190
0915 0  1006                  SLA     6                                       80222200
0916 0  4810                  BSC     -                                       80222210
0917 0  7004                  MDX     LLL                                     80222220
                        *                                                       80222230
0918 0  407C            SSS   BSI     PCSLW         ADD IDENIFYING CHARCTERS  80222240
0919 0  0985                  DC      PCSLS-2       FROM AREA                 80222250
091A 0  0989                  DC      PCSL7-2       TO AREA                   80222260
                        *                                                       80222270
0918 0  7003                  MDX     PCO                                     80222280
                        *                                                       80222290
091C 0  4078            LLL   BSI     PCSLW         ADD IDENIFYING CHARCTERS  80222300
091D 0  09A8                  DC      PCSLL-2       FROM AREA                 80222310
091E 0  0989                  DC      PCSL7-2       TO AREA                   80222320
                        *                                                       80222330
091F 00 74080994        PCO   MDX   L PCSL8,8       SET PUNCH TERMINATOR      80222340
                        *                                                       80222350
0921 0  6203                  LDX     2 3           AREA CONTROL              80222360
0922 0  6109            PC1   LDX     1 9                                     80222370
0923 00 C500095F        PC2   LO    L1 PCSL2-1      GET IOCC                  80222380
0925 0  E01A                  AND     OSW           * REMOVE OLD AREA         80222390
0926 00 EE000941              OR    L2 AREA-1       * OR IN NEW AREA          80222400
0928 00 D500095F              STO   L1 PCSL2-1      * AND STORE BACK          80222410
092A 0  71FC                  MDX     1 -4                                    80222420
0928 0  70F7                  MDX     PC2                                     80222430
                        *                                                       80222440
```

DIMAL LOADER/ORGANIZOR SECTION (CARD)

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                        *                                                       80222450
092C 0  4068            BSI     PCSLW       ADD IDENIFYING CHARCTERS            80222460
092D 0  09AA    PC3     DC      PCSL1-2     FROM AREA                           80222470
092F 0  0978            DC      PCSL6-2     TO AREA                             80222480
                        *                                                       80222490
092F 00 740A092D        MDX  L  PC3,10      CHANGE FROM AREA                    80222500
                        *                                                       80222510
0931 0  080C            XIO     PCH         PUNCH                               80222520
                        *                                                       80222530
0932 0  080D    CHECK   XIO     DSW         SENSE DSW                           80222540
0933 00 4C040932        BSC  L  CHECK,E     8CH RDR NOT RDY                     80222550
                        *                                                       80222560
0935 0  72FF            MDX  2  -1                                              80222570
0936 0  70FB            MDX     PC1                                             80222580
                        *                                                       80222590
0937 00 74E2092D        MDX  L  PC3,-30     RESTORE FROM AREA                   80222600
                        *                                                       80222610
0939 00 7401090F        MDX  L  PCOUT,1     MODIFY RETURN                       80222620
0938 00 4C80090F        BSC  I  PCOUT       RETURN TO MAINLINE                  80222630
                        *                                                       80222640
093E    0000            BSS  E  0                                               80222650
093E 0  0945    PCH     DC      PCSL        PUNCH AREA                          80222660
093F 0  1500            DC      /1500       PUNCH IOCC                          80222670
0940 0  07FF    DSW     DC      /07FF       CONSTANT                            80222680
0941 0  1701            DC      /1701       SENSE DSW IOCC                      80222690
0942 0  4800    AREA    DC      /4800       3RD DISC AREA                       80222700
0943 0  4000            DC      /4000       2ND DISC AREA                       80222710
0944 0  2000            DC      /2000       1ST DISC AREA                       80222720
                        *                                                       80222730
                        *       BOOTSTRAP IN PACKED IMAGE                       80222740
                        *       FOR 1PL CARDS                                   80222750
                        *                                                       80222760
                                                                                80222770
0945 0  0000    PCSL    DC      /0D00                                           80222780
0946 0  0800            DC      /0800       XIO  SK     SEEK                    80222790
0947 0  0A00            DC      /0A00                                           80222800
0948 0  0800            DC      /0800   CK1 XIO  SN     SENSE                   80222810
0949 0  0200            DC      /0200                                           80222820
094A 0  1000            DC      /1000       SLA  2                              80222830
094B 0  2800            DC      /2800                                           80222840
094C 0  4800            DC      /4800       BSC  +Z                             80222850
094D 0  FC00            DC      /FC00                                           80222860
094E 0  7000            DC      /7000       MDX  CK1                            80222870
094F 0  0A00            DC      /0A00                                           80222880
0950 0  0800            DC      /0800       XIO  RD     READ                    80222890
0951 0  0500            DC      /0500                                           80222900
0952 0  0800            DC      /0800   CK2 XIO  SN     SENSE                   80222910
0953 0  0200            DC      /0200                                           80222920
0954 0  1000            DC      /1000       SLA  2                              80222930
0955 0  2800            DC      /2800                                           80222940
0956 0  4800            DC      /4800       BSC  +Z                             80222950
0957 0  FC00            DC      /FC00                                           80222960
0958 0  7000            DC      /7000       MDX  CK2                            80222970
0959 0  0A00            DC      /0A00                                           80222980
095A 0  7000            DC      /7000       MDX  PGM                            80222990
0958 0  AD00            DC      /AD00                                           80223000
095C 0  0D00            DC      /0D00                                           80223010
095D 0  0000    PCSL0   DC      /0000   SN  DC   /0000  INDICATOR              80223020
095E 0  0000            DC      /0000                                           80223030
095F 0  0100            DC      /0100                                           80223040
0960 0  0700    PCSL2   DC      /0700       DC   /0701  SENSE IDC              80223050
0961 0  0000    PCSL3   DC      /0000                                           80223060
0962 0  0000            DC      /0000   SK  DC   /0000  = OF SEEK              80223070
0963 0  0000            DC      /0000                                           80223080
0964 0  0400    PCSL4   DC      /0400       DC   /0400  SEEK IDCC              80223090
0965 0  1200            DC      /1200                                           80223100
0966 0  0000            DC      /0000   RD  DC   /0012  READ AREA              80223110
0967 0  0000            DC      /0000                                           80223120
0968 0  0600    PCSL5   DC      /0600       OC   /0600  READ IDCC              80223130
```


DIMAL LOADER/ORGANIZOR SECTION (CARD)

```
0969 0  4100            DC      /4100                                           80223130
096A 0  0100            DC      /0100       DC   /0141  WORD CT                80223140
0968 0  0000            DC      /0000                                           80223150
096C 0  0000            DC      /0000       DC   /0000  SECTOR ID              80223160
096D 0  0200            DC      /0200       DC   /0000  PROG ID                80223170
096E 0  0400            DC      /0400                                           80223180
096F 0  0800            DC      /0800   PGM DC       PGM START               80223190
0970 0  1800            DC      /1800                                           80223200
0971 0  2800            DC      /2800                                           80223210
0972 0  4800            DC      /4800                                           80223220
0973 0  8800            DC      /8800                                           80223230
0974 0  4800            DC      /4800                                           80223240
0975 0  2800            DC      /2800                                           80223250
0976 0  1800            DC      /1800                                           80223260
0977 0  0800            DC      /0800                                           80223270
0978 0  0400            DC      /0400                                           80223280
0979 0  0200            DC      /0200   END OF LARGE LETTER A                   80223290
097A 0  0001    ONE     DC      /0001   CONSTANT                                80223300
097B 0  0000            DC      /0000                                           80223310
097C 0  0000            DC      /0000                                           80223320
097D 0  0000    PCSL6   DC      /0000   START NUMBER                            80223330
097E 0  0000            DC      /0000                                           80223340
097F 0  0000            DC      /0000                                           80223350
0980 0  0000            DC      /0000                                           80223360
0981 0  0000            DC      /0000                                           80223370
0982 0  0000            DC      /0000                                           80223380
0983 0  0000            DC      /0000                                           80223390
0984 0  0000            DC      /0000                                           80223400
0985 0  0000            DC      /0000                                           80223410
0986 0  0000            DC      /0000                                           80223420
0987 0  0000            DC      /0000                                           80223430
0988 0  0000            DC      /0000                                           80223440
0989 0  0000            DC      /0000                                           80223450
098A 0  0000            DC      /0000                                           80223460
098B 0  0000    PCSL7   DC      /0000   LETTER L OR S                           80223470
098C 0  0000            DC      /0000                                           80223480
098D 0  0000            DC      /0000                                           80223490
098E 0  0000            DC      /0000                                           80223500
098F 0  0000            DC      /0000                                           80223510
0990 0  0000            DC      /0000                                           80223520
0991 0  0000            DC      /0000                                           80223530
0992 0  0000            DC      /0000                                           80223540
0993 0  0000            DC      /0000                                           80223550
0994 0  0000    PCSL8   DC      /0000   COLUMN 80                               80223560
                        ************************************************        80223570
                        *                                                       80223580
                        *       CALLING SEQUENCE TO STORE CHARACTER             80223590
                        *                                                       80223600
                        *       BSI  PCSLW      CALL                            80223610
                        *       DC              FROM AREA                       80223620
                        *       DC              TO AREA                         80223630
                        *                                                       80223640
                        ************************************************        80223650
                        *                                                       80223660
0995 0  0000    PCSLW   DC      /0000   RETURN ADDRESS                          80223670
0996 00 65800995        LDX  I1 PCSLW                                           80223680
0998 0  C100            LD   1  0       GET FROM AREA                           80223690
0999 0  D006            STO     PCSLX+1                                         80223700
099A 0  C101            LD   1  1       GET TO AREA                             80223710
0998 0  D008            STD     PCSLY+1                                         80223720
099C 0  80DD            A       ONE                                             80223730
099D 0  D009            STD     PCSLZ+1                                         80223740
                        *                                                       80223750
099E 0  630A            LDX  3  10                                              80223760
099F 00 C7000000    PCSLX LD    L3  /0000   FROM AREA                           80223770
09A1 0  1888            SRT     8           SAVE L-D BITS                       80223780
09A2 0  1008            SLA     8           POSITION H-D BITS                   80223790
09A3 00 D7000000    PCSLY STO   L3  /0000   TO AREA                             80223800
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09A5 0  1090            SLT     16          POSITION L-O BITS       80223810
09A6 00 D7000000  PCSLZ STD   L3 /0000      TO AREA+1               80223820
09A8 0  73FE            MDX     3 -2                                80223830
09A9 0  70F5            MDX     PCSLX                               80223840
                *                                                   80223850
09AA 00 4D000002        BSC   L1 2           RETURN                  80223860
                *                                                   80223870
                ********************************************      80223880
                *                                                   80223890
                *                                                   80223900
                *           CHARCTER TABLE                          80223910
                *                                                   80223920
                *                                                   80223930
                ********************************************      80223940
09AC 0  0000    PCSL1 DC      /0000       NUMBER 1                  80223950
09AD 0  00FE    PCSLL DC      /00FE       LETTER L                  80223960
09AE 0  0242          DC      /0242                                 80223970
09AF 0  0202          DC      /0202                                 80223980
09B0 0  C2FE          DC      /C2FE                                 80223990
09B1 0  0202          DC      /0202                                 80224000
09B2 0  0202          DC      /0202                                 80224010
09B3 0  0202          DC      /0202                                 80224020
09B4 0  0200          DC      /0200                                 80224030
09B5 0  0202          DC      /0202                                 80224040
09B6 0  0042          DC      /0042       NUMBER 2                  80224050
09B7 0  44A2    PCSLS DC      /44A2       LETTER S                  80224060
09B8 0  8686          DC      /8686                                 80224070
09B9 0  A282          DC      /A282                                 80224080
09BA 0  8A8A          DC      /8A8A                                 80224090
09BB 0  9292          DC      /9292                                 80224100
09BC 0  9292          DC      /9292                                 80224110
09BD 0  8A8A          DC      /8A8A                                 80224120
09BE 0  8262          DC      /8262                                 80224130
09BF 0  8244          DC      /8244                                 80224140
09C0 0  0044          DC      /0044       NUM8ER 3                  80224150
09C1 0  0000          DC      /0000                                 80224160
09C2 0  8282          DC      /8282                                 80224170
09C3 0  0000          DC      /0000                                 80224180
09C4 0  9292          DC      /9292                                 80224190
09C5 0  0000          DC      /0000                                 80224200
09C6 0  9292          DC      /9292                                 80224210
09C7 0  0000          DC      /0000                                 80224220
09C8 0  926C          DC      /926C                                 80224230
09C9 0  0000          DC      /0000                                 80224240
                *                                                   80224250
                *           PRINT MESSAGES                          80224260
                *                                                   80224270
                *                                                   80224280
                *     A001 ND AVAIL CYLS                            80224290
                *                                                   80224300
09CA 0  0009    MSG1  DC      9           WORD COUNT                80224310
09CB 0  310A          DC      /310A       AO                        80224320
09CC 0  0A01          DC      /0A01       01                        80224330
09CD 0  0025          DC      /0025        N                        80224340
09CE 0  2600          DC      /2600       D                         80224350
09CF 0  3115          DC      /3115       AV                        80224360
09D0 0  3139          DC      /3139       AI                        80224370
09D1 0  2300          DC      /2300       L                         80224380
09D2 0  3318          DC      /3318       CY                        80224390
09D3 0  2312          DC      /2312       LS                        80224400
                *                                                   80224410
                *     E001 DISK RD ERR                              80224420
                *                                                   80224430
09D4 0  0008    MSG2  DC      8           WORD COUNT                80224440
09D5 0  350A          DC      /350A       E0                        80224450
09D6 0  0A01          DC      /0A01       01                        80224460
09D7 0  0034          DC      /0034        D                        80224470
09D8 0  3912          DC      /3912       IS                        80224480
```



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09D9 0  2200            DC      /2200       K                       80224490
09DA 0  2934            DC      /2934       RD                      80224500
09DB 0  0035            DC      /0035        E                      80224510
09DC 0  2929            DC      /2929       RR                      80224520
                *                                                   80224530
                *     E002 WRONG SECTOR ID READ                     80224540
                *                                                   80224550
09DD 0  000D    MSG3  DC      13          WORD COUNT                80224560
09DE 0  350A          DC      /350A       E0                        80224570
09DF 0  0A02          DC      /0A02       02                        80224580
09E0 0  0016          DC      /0016        W                        80224590
09E1 0  2926          DC      /2926       RO                        80224600
09E2 0  2537          DC      /2537       NG                        80224610
09E3 0  0012          DC      /0012        S                        80224620
09E4 0  3533          DC      /3533       EC                        80224630
09E5 0  1326          DC      /1326       TD                        80224640
09E6 0  2900          DC      /2900       R                         80224650
09E7 0  3934          DC      /3934       ID                        80224660
09E8 0  0029          DC      /0029        R                        80224670
09E9 0  3531          DC      /3531       EA                        80224680
09EA 0  3400          DC      /3400       D                         80224690
                *                                                   80224700
                *     E003 DISK WRT ERR                             80224710
                *                                                   80224720
09E8 0  0009    MSG4  DC      9           WORD COUNT                80224730
09EC 0  350A          DC      /350A       E0                        80224740
09E0 0  0A03          DC      /0A03       03                        80224750
09FE 0  0034          DC      /0034        D                        80224760
09EF 0  3912          DC      /3912       IS                        80224770
09F0 0  2200          DC      /2200       K                         80224780
09F1 0  1629          DC      /1629       WR                        80224790
09F2 0  1300          DC      /1300       T                         80224800
09F3 0  3529          DC      /3529       ER                        80224810
09F4 0  2900          DC      /2900       K                         80224820
                *                                                   80224830
                *     E004 MODULO 4 ERR                             80224840
                *                                                   80224850
09F5 0  0009    MSG5  DC      9           WORD COUNT                80224860
09F6 0  350A          DC      /350A       E0                        80224870
09F7 0  0A04          DC      /0A04       04                        80224880
09F8 0  0024          DC      /0024        M                        80224890
09F9 0  2634          DC      /2634       DD                        80224900
09FA 0  1423          DC      /1423       UL                        80224910
09FB 0  2600          DC      /2600       D                         80224920
09FC 0  0400          DC      /0400                                 80224930
09FD 0  3529          DC      /3529       ER                        80224940
09FE 0  2900          DC      /2900       R                         80224950
                *                                                   80224960
                *     C001 SET DATA SWS TO FF00 IF DONE             80224970
                *                                                   80224980
09FF 0  0011    MSG6  DC      17          WORD COUNT                80224990
0A00 0  330A          DC      /330A       CO                        80225000
0A01 0  0A01          DC      /0A01       01                        80225010
0A02 0  0012          DC      /0012        S                        80225020
0A03 0  3513          DC      /3513       ET                        80225030
0A04 0  0034          DC      /0034        D                        80225040
0A05 0  3113          DC      /3113       AT                        80225050
0A06 0  3100          DC      /3100       A                         80225060
0A07 0  1216          DC      /1216       SW                        80225070
0A08 0  1200          DC      /1200       S                         80225080
0A09 0  1326          DC      /1326       TD                        80225090
0A0A 0  0036          DC      /0036        F                        80225100
0A0B 0  360A          DC      /360A       FO                        80225110
0A0C 0  0A00          DC      /0A00       0                         80225120
0A0D 0  3936          DC      /3936       IF                        80225130
0A0E 0  0034          DC      /0034        D                        80225140
0A0F 0  2625          DC      /2625       DN                        80225150
0A10 0  3500          DC      /3500       E                         80225160
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                        *                                                       80225170
                        *       E005 EOIT CARD ERR                              80225180
                        *                                                       80225190
0A11 0 0009     MSG7    DC      9           WORO COUNT                          80225200
0A12 0 350A             OC      /350A       EO                                  80225210
0A13 0 0A05             OC      /0A05       O5                                  80225220
0A14 0 0035             DC      /0035        E                                  80225230
0A15 0 3439             DC      /3439       DI                                  80225240
0A16 0 1300             DC      /1300       T                                   80225250
0A17 0 3331             DC      /3331       CA                                  80225260
0A18 0 2934             DC      /2934       RO                                  80225270
0A19 0 0035             OC      /0035        E                                  80225280
0A1A 0 2929             DC      /2929       RR                                  80225290
                        *                                                       80225300
                        *       C002 ENTER PIO TO DELETE IN DATA SWS 00XX        80225310
                        *                                                       80225320
0A1B 0 0015     MSG8    OC      21          WORO COUNT                          80225330
0A1C 0 330A             OC      /330A       CO                                  80225340
0A1D 0 0A02             DC      /0A02       O2                                  80225350
0A1E 0 0035             OC      /0035        E                                  80225360
0A1F 0 2513             DC      /2513       NT                                  80225370
0A20 0 3529             OC      /3529       ER                                  80225380
0A21 0 0027             OC      /0027        P                                  80225390
0A22 0 3934             DC      /3934       IO                                  80225400
0A23 0 0013             DC      /0013        T                                  80225410
0A24 0 2600             OC      /2600       O                                   80225420
0A25 0 3435             DC      /3435       DE                                  80225430
0A26 0 2335             DC      /2335       LE                                  80225440
0A27 0 1335             DC      /1335       TE                                  80225450
0A28 0 0039             OC      /0039        I                                  80225460
0A29 0 2500             DC      /2500       N                                   80225470
0A2A 0 3431             DC      /3431       DA                                  80225480
0A2B 0 1331             OC      /1331       TA                                  80225490
0A2C 0 0012             DC      /0012        S                                  80225500
0A2D 0 1612             OC      /1612       WS                                  80225510
0A2E 0 000A             OC      /000A        0                                  80225520
0A2F 0 0A17             DC      /0A17       OX                                  80225530
0A30 0 1700             DC      /1700       X                                   80225540
                        *                                                       80225550
                        *       C003 RDY 1442 WITH NEW EDIT CARDS               80225560
                        *                                                       80225570
0A31 0 0011     MSG9    OC      17          WORO COUNT                          80225580
0A32 0 330A             DC      /330A       CO                                  80225590
0A33 0 0A03             DC      /0A03       03                                  80225600
0A34 0 0029             DC      /0029        R                                  80225610
0A35 0 3418             DC      /3418       DY                                  80225620
0A36 0 0001             OC      /0001        1                                  80225630
0A37 0 0404             DC      /0404       44                                  80225640
0A38 0 0200             DC      /0200       2                                   80225650
0A39 0 1639             OC      /1639       WI                                  80225660
0A3A 0 1338             DC      /1338       TH                                  80225670
0A3B 0 0025             DC      /0025        N                                  80225680
0A3C 0 3516             OC      /3516       EW                                  80225690
0A3D 0 0035             DC      /0035        E                                  80225700
0A3E 0 3439             DC      /3439       OI                                  80225710
0A3F 0 1300             DC      /1300       T                                   80225720
0A40 0 3331             DC      /3331       CA                                  80225730
0A41 0 2934             OC      /2934       RO                                  80225740
0A42 0 1200             DC      /1200       S                                   80225750
                        *                                                       80225760
                        *       D001 LOCATION OIRECTORY                         80225770
                        *                                                       80225780
0A43 0 000C     MSG0A   DC      12          WORO COUNT                          80225790
0A44 0 340A             OC      /340A       00                                  80225600
0A45 0 0A01             OC      /0A01       01                                  80225810
0A46 0 0000             DC      /0          8LANK                               80225820
0A47 0 2326             DC      /2326       LO                                  80225830
0A48 0 3331             OC      /3331       CA                                  80225840
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0A49 0 1339             DC      /1339       TI                                  80225850
0A4A 0 2625             DC      /2625       ON                                  80225860
0A4B 0 0034             DC      /0034        O                                  80225870
0A4C 0 3929             DC      /3929       IR                                  80225880
0A4O 0 3533             DC      /3533       EC                                  80225890
0A4E 0 1326             DC      /1326       TO                                  80225900
0A4F 0 2918             DC      /2918       RY                                  80225910
                        *                                                       80225920
                        *           PID  CYL  SECT  TSEC                        80225930
                        *                                                       80225940
0A50 0 0000     MSG0B   DC      13          WORO COUNT                          80225950
0A51 0 0000             DC      0           8LANK                               80225960
0A52 0 0000             DC      0           8LANK                               80225970
0A53 0 0000             DC      0           8LANK                               80225980
0A54 0 2739             DC      /2739       PI                                  80225990
0A55 0 3400             DC      /3400       O                                   80226000
0A56 0 0033             DC      /0033        C                                  80226010
0A57 0 1823             OC      /1823       YL                                  80226020
0A58 0 0000             DC      /0          8LANK                               80226030
0A59 0 1235             DC      /1235       SE                                  80226040
0A5A 0 3313             DC      /3313       CT                                  80226050
0A5B 0 0000             DC      /0          8LANK                               80226060
0A5C 0 1312             DC      /1312       TS                                  80226070
0A5D 0 3533             DC      /3533       EC                                  80226080
                        *                                                       80226090
                        *       B002 EOIT TABLE                                 80226100
                        *                                                       80226110
0A5E 0 0008     MSG0C   OC      8           WORO COUNT                          80226120
0A5F 0 340A             OC      /340A       OO                                  80226130
0A60 0 0A02             DC      /0A02       02                                  80226140
0A61 0 0000             DC      0           8LANK                               80226150
0A62 0 3534             DC      /3534       EO                                  80226160
0A63 0 3913             DC      /3913       IT                                  80226170
0A64 0 0013             OC      /0013        T                                  80226180
0A65 0 3132             OC      /3132       A8                                  80226190
0A66 0 2335             DC      /2335       LE                                  80226200
                        *                                                       80226210
                        *       C005 RDY 1442 WITH BLANK CARDS                  80226220
                        *                                                       80226230
0A67 0 000F     MSG0D   DC      15          WORO COUNT                          80226240
0A68 0 330A             OC      /330A       CO                                  80226250
0A69 0 0A05             DC      /0A05       05                                  80226260
0A6A 0 0029             DC      /0029        R                                  80226270
0A6B 0 3418             DC      /3418       OY                                  80226280
0A6C 0 0001             DC      /0001        1                                  80226290
0A6O 0 0404             DC      /0404       44                                  80226300
0A6E 0 0200             DC      /0200       2                                   80226310
0A6F 0 1629             DC      /1639       WI                                  80226320
0A70 0 1338             DC      /1338       TH                                  80226330
0A71 0 0032             DC      /0032        B                                  80226340
0A72 0 2331             DC      /2331       LA                                  80226350
0A73 0 2522             DC      /2522       NK                                  80226360
0A74 0 0033             DC      /0033        C                                  80226370
0A75 0 3129             OC      /3129       AR                                  80226380
0A76 0 3412             DC      /3412       OS                                  80226390
                        *                                                       80226400
                        *       E006 NOT EOIT CARO                              80226410
                        *                                                       80226420
0A77 0 0009     MSG0E   DC      9           WORO COUNT                          80226430
0A78 0 350A             DC      /350A       EO                                  80226440
0A79 0 0A06             OC      /0A06       06                                  80226450
0A7A 0 0025             DC      /0025        N                                  80226460
0A7B 0 2613             DC      /2613       OT                                  80226470
0A7C 0 0035             DC      /0035        E                                  80226480
0A7O 0 3439             DC      /3439       01                                  80226490
0A7E 0 1300             DC      /1300       T                                   80226500
0A7F 0 3331             DC      /3331       CA                                  80226510
0A80 0 2934             DC      /2934       RO                                  80226520
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DIMAL LOADER/ORGANIZOR SECTION (CARD)

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                        *                                                       80226530
                        *       D003 DATA SW CALL SEEK COUNT IS XX               80226540
                        *                                                       80226550
0A81 0  0011            MSGOF DC      17          WORD COUNT                    80226560
0A82 0  340A                  DC      /340A       DO                            80226570
0A83 0  0A03                  DC      /0A03       03                            80226580
0A84 0  0034                  DC      /0034        0                            80226590
0A85 0  3113                  DC      /3113       AT                            80226600
0A86 0  3100                  DC      /3100       A                             80226610
0A87 0  1216                  OC      /1216       SW                            80226620
0A88 0  0033                  OC      /0033        C                            80226630
0A89 0  3123                  OC      /3123       AL                            80226640
0A8A 0  2300                  DC      /2300       L                             80226650
0A8B 0  1235                  OC      /1235       SE                            80226660
0A8C 0  3522                  DC      /3522       EK                            80226670
0A8D 0  0033                  DC      /0033        C                            80226680
0A8E 0  2614                  DC      /2614       OU                            80226690
0A8F 0  2513                  DC      /2513       NT                            80226700
0A90 0  0039                  OC      /0039        1                            80226710
0A91 0  1200                  DC      /1200       S                             80226720
0A92 0  0000                  OC      /0000       SEEK COUNT IN HEX             80226730
                        *                                                       80226740
                        *       C004 SELECT OPTIONS                             80226750
                        *                                                       80226760
0A93 0  0009            MSG10 DC      9           WORD COUNT                    80226770
0A94 0  330A                  DC      /330A       CO                            80226780
0A95 0  0A04                  OC      /0A04       04                            80226790
0A96 0  0012                  DC      /0012        S                            80226800
0A97 0  3523                  OC      /3523       EL                            80226810
0A98 0  3533                  OC      /3533       EC                            80226820
0A99 0  1300                  DC      /1300       T                             80226830
0A9A 0  2627                  DC      /2627       OP                            80226840
0A9B 0  1339                  DC      /1339       T1                            80226850
0A9C 0  2625                  DC      /2625       DN                            80226860
                        *                                                       80226870
                        *       E007 CHECKSUM ERROR                             80226880
                        *                                                       80226890
0A9D 0  000A            MSG11 DC      10          WORD COUNT                    80226900
0A9E 0  350A                  DC      /350A       EO                            80226910
0A9F 0  0A07                  OC      /0A07       07                            80226920
0AA0 0  0033                  DC      /0033        C                            80226930
0AA1 0  3835                  DC      /3835       HE                            80226940
0AA2 0  3322                  OC      /3322       CK                            80226950
0AA3 0  1214                  DC      /1214       SU                            80226960
0AA4 0  2400                  OC      /2400       M                             80226970
0AA5 0  3529                  OC      /3529       ER                            80226980
0AA6 0  2926                  DC      /2926       RD                            80226990
0AA7 0  2900                  OC      /2900       R                             80227000
                        *                                                       80227010
0AA8    0147                  END     PID+1                         8022701   80227020
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DIMAL LOADER/ORGANIZOR SECTION (CARD)

CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
ADCK	031A	02F0,02FA,0323
AQ	08B2	0888,08A7
AQ1	08FA	08C8,08E8
AQ2	0856	0822,084D
AREA	0942	0926
CDCT	0258	01FF,0217,0231,045B,0492
CDTBL	0901	08C0
CHECK	0932	0933
CHED	0180	019A
CHGED	0730	0180,075D
CHG0	0737	0745,0752
CHG1	0746	0740
CHG2	0750	0755
CHG3	0753	074E,074F
CHG4	0756	0739
CKER	079D	045D,0470,0498
CKER1	0783	0786
CKEXT	07B9	07A7
CODCV	081E	07FA,084E
CDOC1	0826	0842
CDOC2	0838	0837
CODC3	0843	083D
CDDC4	0847	081F,0820,0821
COOE	08F8	0647,065C,08EF,08F3
CDOEH	0834	0894
COLAD	0850	07F9,07F8,0826,0846
CDOOO	0852	082D,082E,0832,0833
CDDO1	0853	083A,0843
CODO2	0854	0845
CONV	08F7	08D0,08D2,08D5,08D7,08D9
CTCK	079C	0778,0779,0786,0787
CTLSW	0685	0699,06AA
CVT8L	08FC	08C8
CV12	0478	02EC,04A3
CV12A	047E	0490
CV12B	047F	048E
CV12C	0488	0481
CV120	0494	0499
CV12E	049D	0479,047A,047B
CV8	0434	0330,0476
CV8A	0460	0469
CV88	046C	046F
CV8C	0472	0445,0446
CYCK	04FD	01C7,028C,0434,051E,0521
CYCK1	0508	0502
CYCK2	0511	0507,050A
CYCK3	051F	051B
CYCK4	051D	0514
CYCK5	0518	0520
CYIND	0258	017B,01C8,01F4,0251,02A1,02B2,0284,02C0,0201,0336, 0438,07A9
CYT8L	0148	016C,01CD,01D2,01D5,033C,0419,0512,05E0,0688,06C9, 06D8,078E
CY197	0526	0509
CY90	0525	0501
C8SQ1	0449	045A
C8SQ2	0452	0457
C8SQ3	0458	0453
DESW	0260	020F,0210,06F2
DIRC	056E	020F,0597
DIRC1	0585	0588
DIRC2	058C	
DIRC3	0593	0596
DIRW	059A	0576,0579
DLED	0760	0561,0714,0754,0764,077E,0793

DLED1	0768	0780
DLED2	0772	0770,0771
DLED3	0781	076C
DLED4	0784	0783,078E,079A
DLED5	0794	078A
DLETE	01AD	0197
DLPGM	06ED	01AD,06F6,0717
DLP0	06F8	0726
DLP1	06FD	0712
DLP2	0704	0701
DLP3	070C	0702,0721
DLP4	0714	
DLP5	0719	0709,072D
DLP6	0727	071D
DONE	01A8	01AF,0187,0185,0188,0188,018E,0357
DRCT	0599	01E0,056F,0590,0607,062F,06d7,0710,0718,071F,0722, 0724
DRD	0393	0174,0182,02A8,0344,0398,03C8,03CA,0588,05F3
DRDY	0360	0168,01A8,01F7,02A6,02C5,033A,0364,0367,036A,0429, 05A4,05DC
DRD1	03A6	0349,0380,038D
DRD2	03B6	03AD
DRD3	03C2	0394,0395,0396,038A
DRLST	0620	01B3,034D,0679
DRLS1	062B	062E
DRLS2	0636	0678
DRLS3	0652	0675
DRLS4	066C	066F
DRLS5	0670	0669
DRLS6	0679	0633
DRTBL	0AFB	01D5,057A,057E,0586,058D,05DA,0605,0618,0634,0689, 06C1,06FD,0727,0729
DSN	040A	015F,0161,037A,0388,03A7,03E5,03F4
DSNR	040C	0361,036D,038D,03A8,03AC,03E9,03EA,03F8,03F9
DSW	0940	0925,0932
DWC	025A	01F5,0280,029F,02A4,0207,0308,030E
DWRT	03CC	02AC,0348,03D0,0406,0408,05B0
DWRT1	03E4	03E7,03EE,03FD
DWRT2	03F3	03EB,03F6
DWRT3	0402	03CD,03CE,03FA
ECD	0298	0276,0292,02CA,02D8,02E2,02E6,0326
EDIT	0529	021E,0559,0750
EDIT1	053D	0537
EDIT2	0548	053C,0552
EDIT3	0558	0224,0531,0541,0567
EDLST	0678	018C,034F,0683,0759
EDLS1	0686	0682
EDLS2	069A	06AC
EDLS3	06B3	0683
EDPD	079B	055F,06F8,0736,074D,0753,0768
EDTBL	0C3C	054B,0556,0608,0619,061A,0618,0684,06C7,06D1,0761, 0768,0795,0797
ENTID	0569	052F,054F,0555
ERR	0429	03B4,03C1,03F2,0401
ERR1	043C	043F
FEED	0262	0205
FNT	025E	0229,0237,0264,0270
H8CV	04CA	04DA,052C,0746
H8CV1	04D1	04F9
H8CV2	04DE	04F2
H8CV3	04E8	04EC
H8CV4	04ED	04E6,04E9
H8CV5	04D4	04C6,04CC,04CD
H8CV6	04DC	04D3
HEDEC	08C4	06-5,0656,08F4
HEDE1	08CD	08E3
HEDE2	08D1	0808
HEDE3	08DC	08D3

HEDE4	08E5	08C5,08C6,08C7
HEXCO	0880	0420,063D,0662,06A1,089E,08A2
HEXCV	0868	041E,0638,0660,069F,08A8
HEXC1	0890	0891,089A
HEXC2	08A3	0889,088A
HEXWD	08AA	041C,0639,065A,069D,088D
HEXOO	08A8	0896,0898,089D,089F,08A1
HIST	0F87	0177,0179,0185,0516,0519
HOME	040E	0378
IMG	025F	022A,0230,0282,02D8,0574
IN	0AA8	0215,0226,022D,023A,023D,0240,0243,0267,026A,0273, 0279,027C,0286,02EF,02F1,0302,031E,0321,0328,0328, 0332,0448,0460,0463,0465,046C,0482,0485,0489,0494, 04C8,04E1,073D
IOARA	0813	07E8,07FC,0805,0807,081C
KA8	0528	0505
KEDOO	056D	0540
KF	029C	0275
KFFF8	01C2	017D,07A8
K1	04A8	0497,049A,077A
K200	061D	0613
K201	061E	0615
K3F	031B	02F3
K3000	025C	0247
K320	031D	0310,05CA,0500,05E8
K321	061C	05E8
K4	029D	0296
K7	01E3	01D0
K70FF	025D	024A
K8	0527	04FF
K81	075F	021A,073F
LCC	018C	01A6
LCCN	01E4	01CF,01D1,01D4,01D7,01D9
LCD	04C2	02C1,0207,04BD,0737,0757
LCSC	0418	018C,0358,0427
LDCT	072F	070E,070F,0719,071A
LDNC	059D	0255,02CD,02CF,0577,0581
LDNS	059B	02D4,043C,0571,0593,0783
LDO	059E	024F,057D
LDP	059C	026C,0573
LOPD	072E	06FA,0708
LDSC	059F	0252,02D2,042E,0583,07A5
LOXA	05A2	0280,032D,058C
LED	0186	01A0
LHIND	0851	0824,0828,083C,083F
LLD	0183	019D
LLL	091C	0917
LOC	04FA	04D0,04F3,04F7
LOG	0788	018F,0209,0381,038E,03EF,03FE,0424,050C,0563,0621, 0624,0666,067C,06AD,06D5,06E5,0731,0742,079D,07C2, 07DA,07DC,07EE,07F4
LOG01	078C	
LOG02	07C5	07CD,07CF
LOG05	07D0	07C8
LOG06	07D6	078C,078D,0810
LO1	0189	
LO1A	018F	01AC
LO10	0201	0221,0233,0297,02DC,07A3
LO10B	0213	0203
LO10C	0222	0210
LO11	0231	024C,024D,0318
LO12	0234	0219,0228
LO13	0240	0239
LO14	0247	023F
LO15	024A	0248
LO16	024E	0249,0248
LO17	0264	0257
LO18	026A	0266

L019	026C	0269
L019A	0270	0236
L02	0171	0170
L02A	0174	016D
L02B	0182	016E,0180
L020	0282	0276
L021	0286	028C
L021A	0299	0294
L022	029F	029A,02EA,0311
L023	02A8	02A2
L024	02A0	02A3,02A5
L025	02C7	02C4
L026	0204	0286,02CC,02EB
L027	020F	0209
L028	02E6	0283,032F
L029	02EC	02E7
L03	01C3	0188
L030	02F5	02F4
L031	02F8	0315,0335
L032	0302	02F0,0301,0317
L033	0313	02DE
L034	031E	0271
L035	0330	0324
L036	0336	0211,050F
L037	0342	0341
L038	0344	033E
L039	0348	033F
L04	01F4	0194,01E2,0442,07B9
L040	0350	
L05	01D9	01DE
L08	01F9	01F6
L09	01FC	02E4
LST	04BD	0483
LSTCY	0523	01C5,028A,02C1,0432,04FE
M004	0416	0304,03E0,03E3,03F3,044A,044F,0454,0458
MSG0A	0A43	0623
MSG0B	0A50	0626
MSG0C	0A5F	067E
MSG00	0A67	0607
MSG0E	0A77	0743
MSG0F	0A81	0422,0426
MSG1	09CA	050E
MSG10	0A93	0191
MSG11	0A90	079E
MSG2	09D4	0383
MSG3	09DD	03C0
MSG4	09EB	03F1
MSG5	09F5	0400
MSG6	09FF	020B
MSG7	0A11	0565
MSG8	0A18	06F0
MSG9	0A31	0733
NXTCY	0524	017E,01C3,01C9,0288,028E,0436,0500,0504,0506,0508, 0511,0518,051D,07AD
OA0	0259	01FD,0234,024E,02F8,0306
ONE	097A	099C
OPARA	0908	08C9,08EC,08EE,08F0,08F2
OUT	0004	0288,02AB,0280,0304,0338,0346,0348,04F5,0520,0534, 0530,0545,0549,0628,062B,063F,0649,065E,0664,0668, 066C,0689,068E,0692,0694,06A8,06AF,0748
PC0	0189	01A3
PCH	093E	0931
PCK	056C	026E,0530,0550,074A
PCOUT	090F	06E1,0910,0939,093B
PCSC	0604	0189,0359,06EA
PCSC1	060F	06E9
PCSC2	06F1	060E,060F
PCSC3	06EA	06E5

PCSL	0945	093E
PCSLL	09AD	0910
PCSLS	09B7	0919
PCSLW	0995	0918,091C,092C,0996
PCSLX	099F	0999,09A9
PCSLY	09A3	0998
PCSLZ	09A6	0990
PCSL0	0950	0914
PCSL1	09AC	092D
PCSL2	0960	0923,0928
PCSL3	0961	0912
PCSL4	0964	
PCSL5	0968	
PCSL6	0970	092E
PCSL7	098B	091A,091E
PCSLB	0994	091F
PCSW	06EC	0609,06E4,06E8
PC0	091F	0918
PC1	0922	0936
PC2	0923	0928
PC3	0920	092F,0937
PIO	0146	0AA8
PRSN	0816	07D1
PRSNS	0814	07C5,07D5
PRWRT	0818	07C4,0700
RO	04C8	04AD
ROCD	04A9	0213,04B9,048C,04C1,0736
ROCD1	04AE	04B0
ROC02	04B5	04BE
ROER	04BF	04B6
REAO	0412	0398,03A2,03A5,03A6,03B6
RESRT	0152	0150
RST	07A5	0154
RSTRT	0150	0165
RST1	0168	0159
SAVE	04F8	0400,04E0,04EE
SAVE1	04FC	040F,04EF
SEEK	0410	0384,03B6
SEO	056A	0222,053A,053F,0543,055C
SHIFT	04A5	047F
SKHH	036B	016A,0187,01AA,0338,0350,0371,0377,042B,05A6,050E, 060C,07AF
SKHH1	0360	037F
SKHH2	0378	0374,0370
SKOT	0361	0171,01F9,02C7,0342,03B2,038F,0391,05AE,05E5
SKOT1	0388	0388
SKST	0380	036F,0375
SN	04C4	04AA,04AE
SNR	04C6	020C,04B8,048F
SNSW	01C0	0152,015E,0193,0355,07A0
SSS	0918	
START	015B	0147,0164
TBCK	050A	05C3
T8CT	056B	052A,0553,0558,060A,067F,06C5,077C,0788,078C,078F, 0791
TBISW	061F	05EE,0610
T8LCN	0618	05F0
TBLIN	0508	0180,060E
T8LI1	05E5	05E4
T8LI2	05E0	0612,0617
T8LI3	05F3	05E2,05EA,05EC,05F2,05FA,0601,0614,0616
TBLI4	05FC	0600
TBLI5	0610	0604
T8OUT	05A3	05A8,05B1,05B3,0506,0508,068E,06CE
T8O1	05AE	05A0
TBO2	0588	05AA,0585,05C2,05C9,05CC,05C0,0505
T803	0580	05A8,0586,05CF,0502,0503
T804	0506	05C4,05C8

DIMAL LOADER/ORGANIZOR SECTION (CARO)

```
TERM    D56B    0536
TWRTR   07DE    07C0,07E6
TWRTO   0811    07E7
TWRO1   07E7    07E3
TWRO2   07F7    07F6,080F
TWRO3   0808    0804
TWSNS   081A    D7E0,07EA,07FE
TWWRT   081C    07E9,07F0
WORD    08F6    0643,0654,0801,0806,0800
WRDSW   0812    070F,0802,0808,080C
WRITE   0414    03D3,030B,03DE,03E4
WRTLD   06C4    0353,0602,0716,0758
WRTL1   06CE    06C8,06CC
WRTLD   0686    0351,06C2,0715
WRTL1   068E    068D
W330A   0734    330A
W330B   0744    3308
W330C   079F    330C
W330D   07CC    330D,07C6
W330E   07CE    330E,07C9
W330F   07E5    330F
W3300   0192    3300,035E
W3301   020E    3301
W3302   0369    3302
W3303   0376    3303
W3304   042D    3304
W3305   04AB    3305,04AB
W3306   04C0    3306
W3307   0566    3307
W3308   0608    3308
W3309   06F1    3309
XFCT    029E    028F,0295,0299,0440,0787
XIOSN   07FE    0801
XIOWR   07FD    080A
ZERO    031C    02F9,02FF,030A,0313
ZONE    0858    0835
ZONEN   085C    0856
ZONE1   0867    0859
ZONE2   0872    085A
ZONE3   087C    085B
```


SELECT/EXECUTE SECTION (CARD)

```
                        ABS                                                 802D001D
D2BC                    ORG     /34D0                                       8D200020
                                                                            80200030
                *                                                           8020D040
                *   DIMAL SELECT/EXECUTE SECTION PROGRAM                    80200050
                *   WAITS DESCRIPTION.                                      8D200060
                *                                                           8020007D
340D 0  01D4        DC      W34DD+1     WAIT 4DO                            80200080
                *                                                           8D2DD090
                *                       PROGRAM SELECT WAIT.                80200100
                *                       ENTER PIO OF PROGRAM                80200110
                *                       TO BE SELECTED IN DATA              802D0120
                *                       ENTRY SWITCHES 8 THROUGH            80200130
                *                       15.IF OVERLAP MODE OF               80200140
                *                       OPERATION PREVIOUSLY                80200150
                *                       INDICATED,AND THIS IS               80200160
                *                       LAST PROGRAM TO BE                  80200170
                *                       SELECTED,THEN ALSO SET              80200180
                *                       SWITCHES 0 THROUGH 7                80200190
                *                       TO ALL 1. PRESS START.              8D200200
3401 0  0DAB        DC      W3401+1     WAIT 401                            80200210
                *                                                           80200220
                *                       2310 DISK DRIVE NOT                 8G200230
                *                       READY.READY 2310 AND                80200240
                *                       CONTINUE.IF DISK ARM                80200250
                *                       WAS MOVED,REENTER                   80200260
                *                       COLD START CALL.                    8D200270
                *                                                           802002E0
34D2 0  0DB8        DC      W3402+1     WAIT 402                            80200290
                *                                                           8020030C
                *                       2310 OSW INDICATED AN               80200310
                *                       ERROR ON EACH OF 3                  80200320
                *                       ATTEMPTS TO PERFORM AN              80200330
                *                       I/O OPERATION.THE ERROR             80200340
                *                       BITS ARE IN THE A REG.              80200350
                *                       REENTER COLD START CALL.            80200360
                *                                                           80200370
3403 D  DDC7        DC      W34D3+1     WAIT 403                            8D2003E0
                *                                                           8D200340
                *                       2310 OSW DID NOT                    80200400
                *                       INDICATE HOME AFTER                 80200410
                *                       A SEEK TO HOME WAS                  80200420
                *                       GIVEN.PRESS START TO                80200430
                *                       RETRY.IF ERROR PERSISTS,            8020D440
                *                       CORRECT AND REENTER                 802D0450
                *                       COLD START CALL.                    80200460
                *                                                           80200470
34D4 0  0DF7        DC      W34D4+1     WAIT 404                            8D20D480
                *                                                           80200490
                *                       WRONG SECTOR ID WAS                 802D0500
                *                       READ DURING PROGRAM                 80200510
                *                       INPUT FROM DISK SET                 802D0520
                *                       I COUNTER TO 005D AND               80200530
                *                       PRESS START.RESELECT                80200540
                *                       PROGRAM AT WAIT 400.                8020D550
                *                                                           8020D560
3405 D  03B3        DC      W34D5+1     WAIT 4D5                            80200570
                *                                                           8D20058D
                *                       2310 DISK DRIVE NOT                 8D2DD590
                *                       READY.READY 2310 AND                80200600
                *                       CONTINUE.IF DISKARM                 80200610
                *                       WAS MOVED,REENTER                   8D200620
                *                       COLD START CALL.                    802D0630
                *                                                           80200640
3406 0  D3BF        DC      W34D6+1     WAIT 406                            80200650
                *                                                           802D0660
                *                       2310 OSW DID NOT                    802D0670
                *                       INDICATE HOME AFTER                 80200680
```

```
                    *                                   3 ATTEMPTS TO SEEK          80200690
                    *                                   HOME.CORRECT AND            80200700
                    *                                   CONTINUE.                   80200710
                    *                                                               80200720
3407 0  0442                DC      W3407+1             WAIT 407                    80200730
                    *                                                               80200740
                    *                                   1443 NOT READY.READY        80200750
                    *                                   1443 AND CONTINUE.          80200760
                    *                                                               80200770
                    *                                                               80200780
3408 0  0444                DC      W3408+1             WAIT 408                    80200790
                    *                                                               80200800
                    *                                   1443 BUSY.THIS IS AN        80200810
                    *                                   ERROR CONDITION.SHOULD      80200820
                    *                                   NOT OCCUR.CORRECT AND       80200830
                    *                                   CONTINUE                    80200840
                    *                                                               80200850
3409 0  0458                DC      W3409+1             WAIT 409                    80200860
                    *                                                               80200870
                    *                                   1053/1816 NOT READY.        80200880
                    *                                   READY DEVICE AND            80200890
                    *                                   CONTINUE.                   80200900
                    *                                                               80200910
340A 0  0424                DC      W340A+1             WAIT 40A                    80200920
                    *                                                               80200930
                    *                                   AN ERROR WAS DETECTED       80200940
                    *                                   WHILE READING DISK.THE      80200950
                    *                                   PRINTOUT PRECEDING          80200960
                    *                                   THIS WAIT INDICATES         80200970
                    *                                   THE ERROR.REFER TO          80200980
                    *                                   THE MESSAGE DESCRIPTION     80200990
                    *                                   IN THE DIMAL DOCUMENTA-     80201000
                    *                                   TION FOR ERROR PROCEDURE.   80201010
                    *                                                               80201020
340B 0  0129                DC      W3408+1             WAIT 408                    80201030
                    *                                                               80201040
                    *                                   NO LAST CARD ADDRESS        80201050
                    *                                   WAS SPECIFIED BY A          80201060
                    *                                   USER PROGRAM.SET I          80201070
                    *                                   COUNTER TO 0050 AND         80201080
                    *                                   PRESS START.RESELECT        80201090
                    *                                   PROGRAM.IF ERROR PER-       80201100
                    *                                   SIST,REWRITE THE PRO-       80201110
                    *                                   GRAM ON DISK USING          80201120
                    *                                   THE ADD PROGRAM OPTION      80201130
                    *                                                               80201140
340C 0  012A                DC      W340C+1             WAIT 40C                    80201150
                    *                                                               80201160
                    *                                   NO EDIT CARD XFER           80201170
                    *                                   ADDRESS WAS SPECIFIED       80201180
                    *                                   BY A USER PROGRAM.          80201190
                    *                                   INSURE EDIT WAS NOT         80201200
                    *                                   INCLUDED FOR PROGRAM        80201210
                    *                                   NOT REQUIRING EDIT.         80201220
                    *                                   SET I COUNTER TO 0050       80201230
                    *                                   AND PRESS START.IF          80201240
                    *                                   ERROR PERSISTS REWRITE      80201250
                    *                                   PROGRAM ON DISK             80201260
                    *                                                               80201270
340D                        ORG     /44                 .                           80201280
0570                TEMP    EQU     1405                .                           80201290
                    *                                                               80201300
                    *   DIMAL SYSTEM  SELECT/EXECUTE SECTION                        80201310
                    *                                                               80201320
                    *   THE PURPOSE OF THIS SECTION IS TO                           80201330
                    *   LOCATE A REQUESTED PROGRAM ON THE DISK,                     80201340
                    *   INPUT THAT PROGRAM,MAKE AVAILABLE EDIT                      80201350
                    *   INFORMATION IF REQUIRED,AND THEN XFER                       80201360
```



```
                    *   CONTROL TO THE DFT.                                         80201370
                    *                                                               80201380
0044 0  0200        PID     DC      /0200       DIMAL PROGRAM ID                    80201390
0045 0  7008                MDX     START       SKIP OVER TABLE                     80201400
                    *                                                               80201410
                    *   TABLE CYT8L IS FILLED IN BY THE INITIAL                     80201420
                    *   LOADER DURING DIMAL PACK GENERATION.                        80201430
                    *                                                               80201440
0046 0  0000        CYT8L   DC      0           HEADER/C S LDR CYL                  80201450
0047 0  0000                DC      0           LDR/ORG CYLINDER                    80201460
0048 0  0000                DC      0           SEL/EXC CYLINDER                    80201470
0049 0  0000                DC      0           WORK CYLINDER 1                     80201480
004A 0  0000                DC      0           WORK CYLINDER 2                     80201490
004B 0  0000                DC      0           LOC DIR-EDT TBL CYL                 80201500
004C 0  0000                DC      0           HISTORY TRACK ADDRS                 80201510
0040 0  0000                DC      0           OUTPUT DEVICE INDICATOR             80201520
                    *                                                               80201530
004E 00 4C00012C    START   BSC  L   SE01        INITIALIZE DIMAL SEC                80201540
                    *   LOCATIONS /50 THROUGH /12B CONTAIN                          80201550
                    *   ROUTINES WHICH PROVIDE THE NECESSARY                        80201560
                    *   COMMUNICATION BETWEEN THE DFT'S AND                         80201570
                    *   THE DIMAL SECTION.                                          80201580
                    *                                                               80201590
                    *   THE DFT,S AND DIMAL WILL SHARE 1746                         80201600
                    *   WORDS OF CORE STARTING AT LOCATION 300.                     80201610
                    *   2 WORK CYLINDERS ARE USED FOR TEMPORARY                     80201620
                    *   STORAGE. THE CORE TO DISK,AND DISK TO                       80201630
                    *   CORE TRANSFERS ARE CONTROLED BY A XFER                      80201640
                    *   SWITCH.THIS SWITCH IS MONITORED BY THE                      80201650
                    *   DIMAL SECTION AND OPERATES IN THE                           80201660
                    *   FOLLOWING MANNER,                                           80201670
                    *                                                               80201680
                    *   SWITCH = 0  1)WRITE CORE CONTAINING DFT                     80201690
                    *                 ON WORK CYLINDER 1.                           80201700
                    *               2)INPUT DIMAL INTO VACATED                      80201710
                    *                 CORE FROM WORK CYLINDER 2.                    80201720
                    *                                                               80201730
                    *   SWITCH = 1  1)WRITE CORE CONTAINING                         80201740
                    *                 DIMAL ON WORK CYLINDER 2                      80201750
                    *               2)INPUT DFT INTO VACATED                        80201760
                    *                 CORE FROM WORK CYLINDER 1.                    80201770
                    *                                                               80201780
                    *                                                               80201790
                    *   WRITE CORE ON DISK.                                         80201800
                    *                                                               80201810
0050 0  0848        CMN1    XIO     MASK0       MASK H-O INTERRUPTS                 80201820
0051 0  084C                XIO     MASK1       MASK L-O INTERRUPTS                 80201830
0052 0  4069                BSI     HOME        SEEK DISK TO HOME                   80201840
0053 0  C047                LD      SEEK1       SEEK FORWARD COMMAND                80201850
0054 0  D03E                STO     IOCC+1      SET IN IOCC WORD                    80201860
0055 00 6580009A            LDX  I1 XFRSW       SET XR 1 = XFER SW                  80201870
0057 00 C50000A0            LO   L1 WKCY1       PICKUP PROP WORK CYL                80201880
0059 0  1803                SRA     3           POSITION SEEK COUNT                 80201890
005A 0  D037                STO     IOCC        SET IN IOCC WORD                    80201900
                    *                                                               80201910
0058 0  4047                BSI     ID          SEEK TO PROP WRK CYL                80201920
                    *                                                               80201930
005C 0  6306                LDX  3  6           SET XR = NMBR SECTRS                80201940
005D 0  C038                LD      WRITE       PICKUP WRITE COMMAND                80201950
005E 0  D034                STO     IOCC+1      SET IN IOCC WORD                    80201960
005F 00 6600012A            LDX  L2 298         SET START XFER LOC                  80201970
0061 0  6A30        CMN2    STX  2  IOCC        SET ADDRS IN IOCC WD                80201980
0062 0  C028                LD      SNS         PICKUP CONSTANT 1                   80201990
0063 0  D200                STO  2  0           SET AS READ WORD CNT                80202000
0064 0  C02E                LD      IOCC+1      PICKUP WRITE COMMAND                80202010
0065 0  F032                EOR     K0300       CONVERT TO READ CMND                80202020
0066 0  002C                STO     IOCC+1      SET IN IOCC WORD                    80202030
                    *                                                               80202040
```

SELECT/EXECUTE SECTION (CARD)

```
0067 0  4038            BSI    ID          GO READ SECTOR ID              80202050
                        *                                                 80202060
0068 0  C039            LD     K292        PICKUP CONSTANT 292            80202070
0069 0  D200            STO  2 0           SET AS WRITE WORD CT           80202080
006A 0  C028            LD     IOCC+1      PICKUP READ COMMAND            80202090
006B 0  F02C            EDR    K0300       CONVERT TO WRITE CMD           80202100
006C 0  D026            STO    IOCC+1      SET IN IOCC WORD               80202110
                        *                                                 80202120
006D 0  4035            BSI    IO          GO WRITE 1 SECTOR              80202130
                        *                                                 80202140
006E 00 74010093        MDX  L IOCC+1,1    UPDATE SECTOR BITS             80202150
0070 00 76000123        MDX  L2 291        UPDATE XFER LOCATION           80202160
0072 0  73FF            MDX    3 -1        SKIP IF XFER COMPLET           80202170
0073 0  70ED            MDX    CMN2        GO WRITE NEXT SECTOR           80202180
                        *                                                 80202190
                        *   READ DISK INTO CORE.                          80202200
                        *                                                 80202210
0074 0  C02C            LD     WKCY2       PICKUP CYL 2 ADRS              80202220
0075 0  902A            S      WKCY1       SUB CYL 1 ADRS                 80202230
0076 0  1803            SRA    3           POSITION SEEK COUNT            80202240
0077 0  D01A            STO    IOCC        SAVE DIFF AS SEEK CT           80202250
0078 0  C022            LD     SEEK1       SEEK FORWORD IF SW 0           80202260
0079 00 7400009A        MDX  L XFRSW,0     SKIP IF XFER SW = 0            80202270
007B 0  C019            LD     SEEK2       SEEK BACKWRD IF SW 1           80202280
007C 0  D016            STD    IOCC+1      SEEK CMND TO IOCC WD           80202290
                        *                                                 80202300
007D 0  4025            BSI    ID          SEEK TO PROP WRK CYL           80202310
                        *                                                 80202320
007E 0  C018            LD     READ        PICKUP READ COMMAND            80202330
007F 0  D013            STD    IOCC+1      SET IN IOCC WORD               80202340
0080 0  6306            LDX  3 6           SET XR = NMBR SECTOR           80202350
0081 00 660007FC        LDX  L2 2044       SET START XFER ADDRS           80202360
0083 00 7600FEDD  CMN3  MDX  L2 -291       UPDATE XFER ADDRESS            80202370
0085 0  6A0C            STX    2 IOCC      SET ADDRESS IN IOCC            80202380
0086 0  C01B            LD     K292        PICKUP CONSTANT 292            80202390
0087 0  D200            STO  2 0           SET AS INPUT WORD CT           80202400
                        *                                                 80202410
0088 0  401A            BSI    IO          GO INPUT 1 SECTOR              80202420
                        *                                                 80202430
0089 00 74FF0093        MDX  L IOCC+1,-1   UPDATE SECTOR BITS             80202440
008B 0  73FF            MDX    3 -1        SKIP IF ALL SECT IN            80202450
008C 0  70F6            MDX    CMN3        GO SETUP FOR NXT SCT           80202460
008D 0  703A            MDX    CMN4        SKIP OVER CONSTANTS            80202470
                        *                                                 80202480
                        *   CONSTANTS AND IOCC WORDS                      80202490
                        *                                                 80202500
008E    0000            BSS  E 0           ALIGN TO EVEN ADDRESS          80202510
008E 0  0001    SNS     OC     1           SENSE DISK IOCC                80202520
008F 0  0700            DC     /0700                                      80202530
0090 0  B7C0    SNSR    DC     /B7C0       SENSE/RESET DISK IOCC          80202540
0091 0  0701            DC     /0701                                      80202550
0092 0  0000    IOCC    DC     0           COMMON IOCC WORDS              80202560
0093 0  0000            DC     0                                          80202570
0094 0  00CA    SKHM    OC     202         SEEK HOME IOCC                 80202580
0095 0  0404    SEEK2   DC     /0404       SEEK BACKWARD COMMAND          80202590
0096 0  0141    K321    DC     321         CONSTANT 321                   80202600
0097 0  0605    READ    OC     /0605       DISK READ COMMAND              80202610
0098 0  0300    K0300   DC     /0300       CONSTANT 0300 HEX              80202620
0099 0  0500    WRITE   DC     /0500       WRITE DISK COMMAND             80202630
009A 0  0000    XFRSW   DC     0           TRANSFER SWITCH                80202640
009B 0  0400    SEEK1   DC     /0400       SEEK FORWARD COMMAND           80202650
009C 0  FFFC    MASK0   OC     /FFFC       MASK H-O INTRPT IOCC           80202660
009D 0  0480            DC     /0480                                      80202670
009E 0  FF80    MASK1   DC     /FF80       MASK L-O INTRPT IOCC           80202680
009F 0  0481            OC     /0481                                      80202690
00A0 0  0000    WKCY1   DC     0           WORK CYLINDER 1 ADDRS          80202700
00A1 0  0000    WKCY2   DC     0           WORK CYLINDER 2 ADDRS          80202710
00A2 0  0124    K292    OC     292         CONSTANT 292                   80202720
```


SELECT/EXECUTE SECTION (CARD)

```
                        *                                                 80202730
                        *   COMMON DISK READ,WRITE,SEEK RDUTINE.          80202740
                        *                                                 80202750
00A3 0  0000    IO      DC     0           ENTRY POINT                    80202760
00A4 0  6B14            STX    3 ID2+1     SAVE INDEX REG 3               80202770
00A5 0  6303            LDX    3 3         SET RETRY INDEX                80202780
00A6 0  08E9            XIO    SNSR        SENSE DISK STATUS              80202790
00A7 0  1002            SLA    2           POSITION READY BIT             80202800
00A8 00 4C1000AC        BSC  L ID1,-       BRANCH IF READY                80202810
00AA 0  3401    W3401   DC     /3401       DISK NOT READY                 80202820
00AB 0  70FA            MDX    IO+3        TRY AGAIN                      80202830
00AC 0  08E5    ID1     XIO    IOCC        INITIATE DISK OPERATION        80202840
00AD 0  08E0            XIO    SNS         SENSE DISK STATUS              80202850
00AE 0  1001            SLA    1           POSITION DP CMPLT BIT          80202860
00AF 00 4C1000AD        BSC  L ID1+1,-     BRANCH TILL DP CMPLT           80202870
00B1 0  08DE            XIO    SNSR        RESET STATUS                   80202880
00B2 0  E0DD            AND    SNSR        CHECK FOR ANY ERROR            80202890
00B3 00 4C180088        BSC  L IO2,+-      BRANCH IF NO ERRORS            80202900
00B5 0  73FF            MDX    3 -1        SKIP IF 3RD TRY                80202910
00B6 0  70EF            MDX    IO+3        TRY OPERATION AGAIN            80202920
0087 0  3402    W3402   DC     /3402       OSW INDICATES ERROR            80202930
                        *                                                 80202940
00B8 00 67000000    IO2 LDX  L3 0          RESTORE INDEX REG 3            80202950
00BA 00 4C8000A3        BSC  I IO          RETURN TO USER                 80202960
                        *                                                 80202970
                        *   SEEK DISK ARM TO HOME RDUTINE.                80202980
                        *                                                 80202990
00BC 0  0000    HOME    OC     0           ENTRY POINT                    80203000
00BD 0  08D6    HOME1   XIO    SKHM        SEEK TO HOME                   80203010
00BE 0  08CF            XIO    SNS         SENSE DISK STATUS              80203020
00BF 0  1001            SLA    1           POSITION OP COMPLT BIT         80203030
00C0 00 4C1000BE        BSC  L HOME1+1,-   BRANCH TILL DP COMPLT           80203040
00C2 0  08CD            XIO    SNSR        SENSE/RESET STATUS             80203050
00C3 0  1004            SLA    4           POSITION HOME BIT              80203060
00C4 00 4CA800BC        BSC  I HOME,+Z     RETUR TO USER IF HOME          80203070
00C6 0  3403    W3403   DC     /3403       FAILED TO REACH HOME           80203080
00C7 0  70F5            MDX    HOME+1      TRY AGAIN                      80203090
                        *                                                 80203100
                        *   THE FOLLOWING ROUTINE PERFORMS THE            80203110
                        *   OPERATION REQUESTED BY THE PROGRAM WHICH      80203120
                        *   CALLED ON THE INTERFACE SECTION OF DIMAL.     80203130
                        *                                                 80203140
                        *   THE INTERFACE SECTION IS ENTERED FOR          80203150
                        *   THE FOLLOWING REASONS.                        80203160
                        *                                                 80203170
                        *   1. DFT IS REQUESTING EDIT INFORMATION.        80203180
                        *   2. OPERATOR INDICATES ALL DFT'S LOADED.       80203190
                        *   3. THE NEXT DFT IS TO BE LOADEDED.            80203200
                        *   4. THE DFT'S HAVE TERMINATED OPERATION.       80203210
                        *                                                 80203220
00C8 0  40F3    CMN4    BSI    HOME        RETURN ARM TO HOME             80203230
00C9 0  C0D0            LO     XFRSW       PICKUP TRANSFER SWITCH         80203240
00CA 00 4C180183        BSC  L SE04,+-     GO TO DISK MONITOR IF OFF      80203250
00CC 0  1010            SLA    16          CLEAR ACC                      80203260
00CD 0  00CC            STO    XFRSW       CLEAR TRANSFER SWITCH          80203270
                        *                                                 80203280
00CE 0  C045            LD     EDSW        PICKUP EDIT SWITCH             80203290
00CF 00 4C840124        BSC  I MECD,E      EXIT VIA VECTOR IF ON          80203300
                        *                                                 80203310
0001 0  C043            LO     TRMSW       PICKUP LAST PROG SW            80203320
00D2 00 4C840123        BSC  I MLCD,E      EXIT VIA VECTOR IF ON          80203330
                        *                                                 80203340
0004 0  C044            LO     IMG         PICKUP IMAGE INDICATOR         80203350
0005 00 4C84011B        BSC  I XFER,E      EXIT TO LOADED PROGRAM         80203360
                        *                                                 80203370
                        *   DIMAL WILL ENTER THE INTERFACE SECTION        80203380
                        *   TO LOAD PROGRAMS STORED ON DISK IN CORE       80203390
                        *   IMAGE.THE FOLLOWING ROUTINE PERFORMS THIS     80203400
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                        *     LOAO.                                          80203410
                        *                                                    80203420
00D7 0  C04D                  LO      /0125     SAVE CONSTANTS             80203430
00D8 0  D046                  STO     /011F     *                          80203440
00D9 0  C84C                  LDD     /0126     *                          80203450
00DA 0  D845                  STD     /0120     *                          80203460
00DB 0  C038          CMN5    LD      SECCT     PICKUP SECT COUNT          80203470
00DC 0  D0DF                  STO     HOME      SAVE IN WORK LOC           80203480
00D0 00 67000118              LOX   L3 STCYL    SET XR = STARTING CYL      80203490
00DF 00 66800116              LDX   I2 ORG      SET XR = PROG ORG ADRS     80203500
00E1 0  C300          CMN6    LD      3 0       PICKUP STARTING CYL        80203510
00E2 0  D030                  STD     S10CK     SAVE FOR SECTOR ID CK      80203520
00E3 0  1883                  SRT     3         SAVE SECTOR BITS           80203530
00E4 0  D300                  STO     3 0       SAVE SECTOR COUNT          80203540
00E5 0  93FF                  S       3 -1      SDB PREVIOUS ADDRESS       80203550
00E6 0  D0AB                  STO     IOCC      SET IN IO COMMAND WD       80203560
00E7 0  C083                  LD      SEEK1     PICKUP SEEK FORWARD CMD    80203570
00E8 0  D0AA                  STO     IOCC+1    SET IN IOCC WORD           80203580
                        *                                                  80203590
00E9 0  4089                  BSI     IO        GO SEEK TO DFT CYL         80203600
                        *                                                  80203610
00EA 0  C0AC                  LD      READ      PICKUP READ COMMAND        80203620
00EB 0  1803                  SRA     3         POSITION TO ADD SECT BITS  80203630
00EC 0  1083                  SLT     3         ADD SECTOR BITS            80203640
00ED 0  D0A5                  STO     IOCC+1    SET COMMAND IN IOCC        80203650
                        *                                                  80203660
00EE 0  6AA3          CMN7    STX     2 IOCC    SET INPUT ADDRS IN IOCC    80203670
00EF 0  C0A6                  LD      K321      PICKUP CONSTANT 321        80203680
00F0 0  D200                  STD     2 0       STORE AS INPDT WORD CNT    80203690
                        *                                                  80203700
00F1 0  40B1                  BSI     IO        GO INPDT 1 SECTOR          80203710
                        *                                                  80203720
00F2 0  C020                  LD      SIOCK     PICKUP EXPECTED SECT ID    80203730
00F3 0  F201                  EOR     2 1       CHECK AGAINST ACTUAL       80203740
00F4 00 4C1800F8              BSC   L CMN8,+-   BRANCH ON PROPER SID       80203750
                        *                                                  80203760
00F6 0  3404          W3404   DC      /3404     WRONG SECTOR READ          80203770
00F7 0  70D0                  MDX     CMN4      TRY AGAIN                  80203780
                        *                                                  80203790
00F8 00 65000140      CMN8    LDX   L1 320      SET MOVE INDEX             80203800
00FA 0  C202          CMN9    LD      2 2       PICKUP PROGRAM WORD        80203810
00FB 0  D200                  STO     2 0       REPOSITION TO PROP LOC     80203820
00FC 0  7201                  MDX     2 1       INCR POSITION INDEX        80203830
00FD 0  71FF                  MDX     1 -1      SKIP WHEN ALL WDS MOVED    80203840
00FE 0  70F8                  MDX     CMN9      GO MOVE NEXT WORD          80203850
00FF 00 74FF008C              MDX   L HOME,-1   SKIP IF ALL SECT RED       80203860
0101 0  7007                  MDX     CMN11     PREPARE FOR NEXT SECTOR    80203870
                        *                                                  80203880
0102 0  40B9                  BSI     HOME      RETURN DISK TO HOME        80203890
0103 0  C01B                  LD      /011F     RESTORE CONSTANTS          80203900
0104 0  D020                  STD     /0125     *                          80203910
0105 0  C81A                  LDD     /0120     *                          80203920
0106 0  D81F                  STD     /0126     *                          80203930
0107 00 4C800118              BSC   I XFER      GO TO PROGRAM              80203940
                        *                                                  80203950
0109 00 74010113      CMN11   MDX   L SIOCK,1   INCR EXPECTED SIO          80203960
010B 0  C087                  LD      IOCC+1    PICKUP READ COMMAND        80203970
010C 0  8081                  A       SNS       ADD 1 TO SECTOR BITS       80203980
010D 0  D085                  STD     IOCC+1    PLACE IN IOCC WORD         80203990
010E 0  160D                  SLA     13        SAVE ONLY SECTOR BITS      80204000
010F 00 4C2000EE              BSC   L CMN7,Z     BRANCH IF LAST SECT NOT 7  80204010
                        *                                                  80204020
0111 0  7301                  MDX   3 1         INCR XR TO GET NEXT CYL    80204030
0112 0  70CE                  MDX     CMN6      GO INPDT NEXT SECTOR       80204040
                        *                                                  80204050
0113 0  0000          SIOCK   DC      0         SECTOR IO CHECK LOC        80204060
                        *                                                  80204070
                        *     THE FOLLOWING LOCATIONS ARE LOADED BY        80204080
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                        *     THE DIMAL SELECT/EXECUTE SECTION.            80204090
                        *                                                  80204100
0114 0  0000          EDSW    DC      0         EDIT SWITCH                80204110
0115 0  0000          TRMSW   DC      0         LAST PRDGRAM SWITCH        80204120
                        *                                                  80204130
0116 0  0000          ORG     DC      0         DFT ORG ADDRESS            80204140
0117 0  0000          SECCT   DC      0         DFT SECTOR COUNT           80204150
0118 0  0000          XFER    DC      0         DFT XFER ADDRESS           80204160
0119 0  0000          IMG     DC      0         DFT IMAGE ON DISK          80204170
011A 0  0000                  DC      0                                    80204180
0118 0  0000          STCYL   DC      0         STARTING DISK LOC OF DFT   80204190
011C 0  0000                  DC      0         NEXT CYLINDER              80204200
011D 0  0000                  DC      0         NEXT CYLINDER              80204210
011E                          DRG     /11F                                 80204220
011F 0  0000                  DC      0         * RELOCATION FACTOR        80204230
0120 0  0000                  DC      0         * AND CORE LIMIT           80204240
0121 0  0000                  DC      0         * SAVE LOCATIONS           80204250
                        *                                                  80204260
0122                          DRG     /123                                 80204270
                        *                                                  80204280
                        *     THE FOLLOWING LOCATION ARE REFERENCED        80204290
                        *     BY DIMAL AND THE DFTS.                       80204300
                        *                                                  80204310
0123 0  0128          MLCD    DC      W340B     LAST PROG XFER VECTOR      80204320
0124 0  0129          MECD    DC      W340C     EDIT CARD XFER VECTOR      80204330
0125 0  0000          NLOC    DC      0         RELOCATION FACTOR          80204340
0126 0  0800          DLIM    DC      /0800     CORE LIMIT CONSTANT        80204350
0127 0  0000          UPPER   DC      0         CORE LIMIT LOCATION        80204360
0128 0  340B          W340B   DC      /340B     NO LAST PROG VECTOR        80204370
0129 0  340C          W340C   DC      /340C     NO EDIT CARD VECTOR        80204380
                        *                                                  80204390
012A                          ORG     300                                  80204400
                        *                                                  80204410
                        *     THIS IS THE MAIN PORTION OF THE DIMAL        80204420
                        *     SELECT/EXECDTE SECTION IT WILL PERFORM       80204430
                        *     THE NECESSARY HOUSEKEEPING,INPDT THE         80204440
                        *     RELOCATABLE DFT'S,AND OPERATE THE            80204450
                        *     CONTROL SWITCHES USED BY THE COMMUNICA-      80204460
                        *     TION PORTION.                                80204470
                        *                                                  80204480
012C 0  63F8          SE01    LDX     3 -8      SET XR 3 = -7              80204490
012D 00 C700004F              LD    L3 CYT8L+8  PICKUP TABLE ENTRY         80204500
012F 00 07000173              STO   L3 CYLTB+8  XFER TO SAFE AREA          80204510
0131 0  7301                  MDX     3 1       SKIP WHEN DONE             80204520
0132 0  70FA                  MDX     SE01+1    MOVE NEXT ENTRY            80204530
                        *                                                  80204540
                        *     ADD AREA CODE TO DISK IOCC'S.                80204550
                        *                                                  80204560
0133 00 C400000D              LD    L /0        GET AREA CODE FROM CALL    80204570
0135 0  E03F                  AND     KF8       REMOVE INSTRUCTION         80204580
0136 0  D03D                  STO     AC        SAVE AREA CODE             80204590
0137 0  630D                  LDX     3 13      SET XR 3 = 13              80204600
0138 0  C038          SE02    LD      AC        PICKUP AREA CODE           80204610
0139 00 EF00008E              OR    L3 SNS      OR IN DISK COMMAND         80204620
0138 00 D700008E              STD   L3 SNS      REPLACE COMMAND            80204630
013D 0  C036                  LD      AC        PICKUP AREA CODE           80204640
013E 00 EF00040C              OR    L3 DSN      OR IN DISK COMMAD          80204650
0140 00 D700040C              STD   L3 DSN      REPLACE COMMAND            80204660
0142 0  73FE                  MDX     3 -2      SKIP WHEN DONE             80204670
0143 0  70F4                  MDX     SE02      BUILD NEXT COMMAND         80204680
                        *                                                  80204690
0144 0  C029                  LD      CYLT8+3   GET WORK CYL 1 ADDRS        80204700
0145 00 040000A0              STO   L WKCY1     STORE IN INTERFACE SECT    80204710
0147 0  C027                  LD      CYLT8+4   GET WORK CYL 2 ADDRS        80204720
0148 00 D40000A1              STO   L WKCY2     STORE IN INTERFACE SECT    80204730
                        *                                                  80204740
                        *     DETERMINE CORE SIZE                          80204750
                        *                                                  80204760
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014A 0  1010            SLA     16          CLEAR ACC                       80204770
014B 00 D4000000        STO  L  0           CLEAR LOCATION ZERO             80204780
014D 00 D4006000        STO  L  /6000       CLEAR LOC 6000 OR 4000          80204790
014F 0  6104            LDX  1  4           SET 4-16K INDEX                 80204800
0150 0  C0D5            LD      ULIM        FETCH CORE SIZE CONST           80204810
0151 0  1001    SE03    SLA     1           POS TO NEXT CORE BLOCK          80204820
0152 0  B0D3            STO     ULIM        UPOATE CORE SIZE                80204830
0153 00 D4800126        STO  I  ULIM        STORE IN DEFINED LOC            80204840
0155 00 74000000        MDX  L  0,0         CHECK IF WRAP AROUND            80204850
0157 0  7002            MDX     SE038       SIZE FOUND - EXIT               80204860
0158 0  71FF            MDX  1  -1          SKIP IF 4-16K CHECKED           80204870
0159 0  70F7            MDX     SE03        GO CHECK NEXT BLOCK             80204880
015A 0  71FF    SE038   MDX  1  -1          SKIP IF 24 OR 32K               80204890
0158 0  7027            MDX     SE04        BRANCH 4,8 OR 16K               80204900
015C 00 74006000        MDX  L  /6000,0     SKIP IF 32K                     80204910
015E 0  C002            LD      K6000       FETCH 24K SIZE CONSTANT         80204920
015F 0  D0C6            STO     ULIM        SET PROPER SIZE 24 OR 32K       80204930
0160 0  7022            MDX     SE04        UNCONDITIONAL BRANCH OUT        80204940
                *                                                           80204950
0161 0  6000    K6000   DC      /6000       24K CORE SIZE CONSTANT          80204960
                *                                                           80204970
                *       RESTART INSTRUCTIONS                                80204980
                *                                                           80204990
0162 0  6105    SE03A   LDX  1  5           SET CLEAR INDEX                 80205000
0163 0  1010            SLA     16          CLEAR ACC                       80205010
0164 00 D5000175 CLR    STO  L1 KF8         CLEAR SWITCHES                  80205020
0166 0  71FF            MDX  1  -1          SKIP WHEN DONE                  80205030
0167 0  70FC            MDX     CLR         CLEAR NEXT LOCATION             80205040
0168 00 44000384        BSI  L  DHM         INSURE DISK HOME                80205050
016A 0  7018            MDX     SE04        SKIP OVER CONSTANTS             80205060
                *                                                           80205070
                *       DIAGI CYLINDER ASSIGNMENT TABLE                     80205080
                *                                                           80205090
0168 0  0000    CYLT8   DC      0           HEADER/CS LDR CYL               80205100
016C 0  0000            DC      0           LDR/DRG CYLINDER                80205110
016D 0  0000            DC      0           SEL/EXC CYLINDER                80205120
016E 0  0000            DC      0           WORK CYLINDER 1                 80205130
016F 0  0000            DC      0           WORK CYLINDER 2                 80205140
0170 0  0000            DC      0           LOC DIR-EDT TBL CYL             80205150
0171 0  0000            DC      0           CE HISTORY CYLINDER             80205160
0172 0  0000            DC      0           OUTPUT DEVICE INDCTR            80205170
                *                       CONSTANTS                           80205180
                *                                                           80205190
0173 0  6050    BRANC   LDX     /50         BRANCH INSTRUCTION              80205200
0174 0  0000    AC      DC      0           DRIVE AREA CODE                 80205210
0175 0  F800    KF8     DC      /F800       CONSTANT HEX F800               80205220
0176 0  0000    PIDSV   DC      0           PID SAVE LOCATION               80205230
0177 0  0000    LSTPG   DC      0           TERMINATE LOAD INDC             80205240
0178 0  0000    PIDRQ   DC      0           REQUESTED PROG ID               80205250
0179 0  0000    MONSW   DC      0           DIAG MON LOADED SW              80205260
017A 0  0000    EDTSW   DC      0           EDIT AVAILABLE INDCR            80205270
017B 0  0001    K1      DC      1           CONSTANT 1                      80205280
017C 0  FFFF    KFFFF   DC      /FFFF       CONSTANT HEX FFFF               80205290
017D 0  07FF    RLBA    DC      2047        BASE RELOC FACTOR               80205300
017E    0000            BSS  E  0                                           80205310
017E 0  0000    SNSW    DC                  SENSE DATA SW IOCC              80205320
017F 0  0740            DC      /0740                                       80205330
0180 0  4C00    BRAN1   DC      /4C00       RESTART INSTRUCTION             80205340
0181 0  0152            DC      SE03A       *                               80205350
0182 0  009F    K9F     DC      /009F       CONSTANT HEX 009F               80205360
                *                                                           80205370
                *       LOCATION SE04 IS REFERENCED BY BOTH THE             80205380
                *       INTERFACE SECTION AND THE MAIN SELECT/              80205390
                *       EXECUTE SECTION.                                    80205400
                *                                                           80205410
0183 0  C0EF    SE04    LD      BRANC       RESTORE NON MON PROG            80205420
0184 00 D4000028        STD  L  /28         *RESTART INSTRUCTION            80205430
0186 0  C8F9            LDD     BRAN1       GET RESTART INSTRUCTION         80205440
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0187 00 DC000000        STD  L  0           SET IN LOCS 0 AND 1             80205450
0189 0  C0E5            LD      CYLT8+4     WORK CYL 2 ADDRESS              80205460
018A 0  1803            SRA     3           POSITION SEEK COUNT             80205470
0188 0  D004            STD     SE04A+2     SET IN SEEK CALL                80205480
                *                                                           80205490
018C 00 440003AA        BSI  L  DRDY        CHECK DISK READY                80205500
018E 00 440003C6 SE04A  BSI  L  DSK         SEEK TO WORK CYL 2              80205510
0190 0  0000            DC      0           SEEK COUNT                      80205520
                *                                                           80205530
                *       CHECK IF EDIT INFORMATION IS BEING                  80205540
                *       REQUESTED.                                          80205550
                *                                                           80205560
0191 0  C0E8            LD      EDTSW       PICKUP EDIT AVAL IND            80205570
0192 00 4C180183        BSC  L  SE10,+-     BRANCH IF NO EDIT               80205580
0194 0  C0E6            LD      K1          PICKUP CONSTANT 1               80205590
0195 00 D4000114        STD  L  EDSW        SET INTERFACE EDIT SW           80205600
                *                                                           80205610
0197 00 6500057D SE06   LDX  L1 TEMP        SET XR = INPUT AREA             80205620
0199 0  C100            LD   1  0           PICKUP DATA IND WORD            80205630
019A 0  1008            SLA     8           REMOVE PID                      80205640
0198 0  1808            SRA     8           POSITION DATA COUNT             80205650
019C 0  D001            STO     SE07+1      SET IN LDX INSTRUCTN            80205660
019D 00 66000000 SE07   LDX  L2 0           SET XR = EDIT DATA CT           80205670
019F 0  6300            LDX  3  0           SET MOVE XR = 0                 80205680
01A0 0  C101    SE08    LD   1  1           PICKUP EDIT ENTRY               80205690
01A1 0  D300            STD  3  0           PLACE IN LOC 0 AND UP           80205700
01A2 0  7301            MDX  3  1           INCR MOVE INDEX                 80205710
01A3 0  7101            MDX  1  1           INCR IN AREA INDEX              80205720
01A4 0  72FF            MDX  2  -1          SKIP WHEN ALL WDS MOVED         80205730
01A5 0  70FA            MDX     SE08        GO MOVE NEXT WORD               80205740
                *                                                           80205750
01A6 0  7101            MDX  1  1           ADJ INDEX FOR NXT CARD          80205760
01A7 00 C4000001        LD   L  /1          PICKUP LOCATION 1               80205770
01A9 0  F0D2            EOR     KFFFF       CHECK IF EDIT TERM              80205780
01AA 00 4C180180        BSC  L  SE09,+-     BRANCH IF TERM                  80205790
01AC 0  69E8            STX  1  SE06+1      SAVE XR 1 FOR NXT CD            80205800
01AD 60 7401009A SE08A  MDX  L  XFRSW,1     SET TRANSFER SWITCH             80205810
01AF 0  6050            LDX     /50         GO TO INTERFACE SECT            80205820
                *                                                           80205830
0180 0  1010    SE09    SLA     16          CLEAR ACC                       80205840
01B1 0  D0C8            STD     EDTSW       CLEAR EDIT AVAIL IND            80205850
0182 0  70FA            MDX     SE08A       PREPARE TO EXIT                 80205860
                *                                                           80205870
                *       CHECK IF PROGRAM TO BE LOADED,OR IF                 80205880
                *       LAST PROGRAM XFER SHOULD OCCUR.                     80205890
                *                                                           80205900
01B3 0  1010    SE10    SLA     16          CLEAR ACC                       80205910
0184 00 04000114        STD  L  EOSW        CLEAR INTRFACE EDT SW           80205920
0186 00 6500057D        LDX  L1 TEMP        RESTORE EDIT HANDLING           80205930
0188 0  69DF            STX  1  SE06+1      * INDEX INSTRUCTION             80205940
                *                                                           80205950
01B9 0  C08C            LD      PIDSV       PICKUP PID HOLD LOC             80205960
018A 00 4C1801C1        BSC  L  SE11,+-     BRANCH IF NO PID WAIT           80205970
018C 0  D0B3            STD     PIDRQ       SET PID IN REQUEST LOC          80205980
018D 0  1010            SLA     16          CLEAR ACC                       80205990
018E 0  D0B7            STD     PIDSV       CLEAR PID HOLD LOC              80206000
018F 00 4C0001F7        BSC  L  SE19+2      GO INPUT PROGRAM                80206010
                *                                                           80206020
01C1 0  C085    SE11    LD      LSTPG       PICKUP LAST PROG IND            80206030
01C2 0  F0B9            EOR     KFFFF       CHECK IF INDICATOR ON           80206040
01C3 0  1008            SLA     8           POSITION FOR CHECK              80206050
01C4 00 4C2001CD        BSC  L  SE12,Z      BRANCH IF NOT LST PGM           80206060
01C6 00 D4000125 SE11A  STD  L  NLOC        CLEAR RELOCATION ADRS           80206070
01C8 0  D0AE            STO     LSTPG       CLEAR LAST PROG SW              80206080
01C9 0  D0AF            STO     MONSW       CLEAR DM LOADED SW              80206090
01CA 00 74010115        MDX  L  TRMSW,1     SET INTERFACE TERM SW           80206100
01CC 0  70E0            MDX     SE08A       PREPARE TO EXIT                 80206110
                *                                                           80206120
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                        *     REQUEST PID OF NEXT PROGRAM                  80206130
                        *                                                  80206140
01CD 0  1010    SE12    SLA     16          CLEAR ACC                      80206150
01CE 00 04000115        STO  L  TRMSW       CLEAR INTERFACE SW             80206160
                        *                                                  80206170
01D0 00 44000430 SE13   BSI  L  LDG         PRINT  ENTER PID               80206180
01D2 0  04FE            DC      MSG01       MESSAGE ADDRESS                80206190
                        *                                                  80206200
01D3 0  3400    W3400   DC      /3400       WAIT TO SELECT PID             80206210
                        *                                                  80206220
01D4 0  08A9            XIO     SNSW        SENSE DATA SWITCHES            80206230
01D5 0  1888            SRT     8           POSITION TERM BITS             80206240
01D6 0  00A0            STO     LSTPG       SAVE TERM BITS                 80206250
01D7 0  1010            SLA     16          REMOVE TERM BITS               80206260
01D8 0  1088            SLT     8           RETRIEVE PID                   80206270
01D9 00 4C1801C1        BSC  L  SE11,+-     BRANCH IF PID 0                80206280
01DB 0  30A6            CMP     K9F         CHECK IF MONITOR PGM           80206290
01DC 0  7002            MDX     SE14        NON MONITOR PROG               80206300
01DD 0  7008            MDX     SE16        MONITOR PROG                   80206310
01DE 0  700A            MDX     SE16        MONITOR PROG                   80206320
                        *                                                  80206330
                        *     NON MONITOR PROGRAM SELECTED                 80206340
                        *                                                  80206350
01DF 0  0098    SE14    STO     PIDRQ       SAVE PID REQUEST               80206360
01E0 0  .010            SLA     16          CLEAR ACC                      80206370
01E1 0  0097            STO     MONSW       CLEAR MON LOADED SW            80206380
                        *                                                  80206390
01E2 00 44000202 SE15   BSI  L  DIRS        GO SEARCH DIR FOR PID          80206400
                        *                                                  80206410
01E4 00 44000327        BSI  L  EDTS        GO SEARCH EDIT TABLE           80206420
                        *                                                  80206430
01E6 00 7401009A        MDX  L  XFRSW,1     SET TRANSFER SWITCH            80206440
01E8 0  6050            LDX     /50         GO TO INTERFACE SECT           80206450
                        *                                                  80206460
                        *     MONITOR DEPENDENT PROGRAM REQUESTED. IF      80206470
                        *     DIAG MONITOR HAS NOT BEEN PREVIOUSLY         80206480
                        *     LOADED,DIMAL WILL LOAD IT BEFORE LOADING     80206490
                        *     THE REQUESTED PROGRAM.                       80206500
                        *                                                  80206510
01E9 00 74000179 SE16   MDX  L  MONSW,0     SKIP IF MON NOT LOADED         80206520
01EB 0  7009            MDX     SE19        MONITOR IN  CONTINUE           80206530
01EC 0  B08E            CMP     K1          CHECK IF PID IS DM             80206540
01ED 0  7004            MDX     SE18        NOT DIAG MON PID               80206550
01EE 0  7003            MDX     SE18        NOT DIAG MON PID               80206560
01EF 0  00A8    SE17    STO     PIDRQ       SAVE DIAG MON PID              80206570
01F0 0  6688            STX     MONSW       SET MONITOR LOADED SW          80206580
01F1 0  70F0            MDX     SE15        GO INPUT DIAG MONITOR          80206590
                        *                                                  80206600
                        *     DIAG MONITOR NOT LOADED. SAVE REQUESTED      80206610
                        *     PID AND INPUT DIAG MONITOR.                  80206620
                        *                                                  80206630
01F2 0  0083    SE18    STO     PIDSV       SAVE REQUESTED PID             80206640
01F3 0  C087            LD      K1          PICKUP DIAG MON PID            80206650
01F4 0  70FA            MDX     SE17        SETUP TO INPUT DM              80206660
                        *                                                  80206670
                        *     DIAG MONITOR HAS BEEN LOADED. INPUT          80206680
                        *     REQUESTED MONITOR DEPENDENT PROGRAM.         80206690
                        *                                                  80206700
01F5 00 04000178 SE19   STO  L  PIDRQ       SAVE REQUESTED PID             80206710
01F7 00 44000202        BSI  L  DIRS        GO SEARCH DIR FOR PID          80206720
                        *                                                  80206730
                        *     THE FOLLOWING SECTION INPUTS THE MONITOR     80206740
                        *     DEPENDENT PROGRAM,POSITIONS IT IN CORE       80206750
                        *     ADDING RELOCATION FACTORS IF REQUIRED,       80206760
                        *     AND CHECKS FOR EXCEEDING CORE LIMITS.        80206770
                        *                                                  80206780
                        *                                                  80206790
                        *     COMPUTE RELOCATION FACTOR.                   80206800
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                        *                                                  80206810
01F9 00 C4000125        LO   L  NLOC        PICKUP NEXT LOCATION           80206820
01F8 00 9400017D        S    L  RLBA        SUB BASE CONSTANT 2047         80206830
01FO 00 04000127        STO  L  UPPER       SAVE IN RELOCTE CONST          80206840
                        *                                                  80206850
01FF 00 44000384        BSI  L  OHM         SEEK DISK TO HOME              80206860
0201 00 6700011B        LDX  L3 STCYL       SET XR = CYL WORD 1            80206870
0203 0  6801            STX   3 SE20+1      SAVE INDEX REG 3               80206880
                        *                                                  80206890
0204 00 67000000 SE20   LDX  L3 0           SET XR TO PROP CYL WD          80206900
0206 0  C300            LD   3 0            PICKUP CYLINDER ADRS           80206910
0207 0  D00F            STO     SE22+4      SAVE FOR READ CALL             80206920
0208 0  1803            SRA     3           REMOVE SECTOR BITS             80206930
0209 0  1003            SLA     3           REPOSITION CYL NMBR            80206940
020A 0  D300            STO  3 0            SAVE NMBR FOR FOL CKS          80206950
020B 0  93FF            S    3 -1           SUBTRACT PREVIOUS CYL          80206960
020C 0  1803            SRA     3           POSITION SEEK COUNT            80206970
020D 0  0004            STO     SE21+2      SET IN SEEK CALL               80206980
020E 00 74010205        MDX  L  SE20+1,1    ADJ FOR NEXT CYLINDER          80206990
                        *                                                  80207000
                        *     SEEK TO CYLINDER CONTAINING DFT.             80207010
                        *                                                  80207020
0210 00 440003C6 SE21   BSI  L  DSK         DISK SEEK CALL                 80207030
0212 0  0000            DC      0           SEEK COUNT                     80207040
                        *                                                  80207050
                        *     READ 1 SECTOR CONTAING DFT                   80207060
                        *                                                  80207070
0213 00 440003D4 SE22   BSI  L  DRO         READ DISK CALL                 80207080
0215 0  0141            DC      321         WORD COUNT                     80207090
0216 0  0578            DC      TEMP-2      INPUT AREA                     80207100
0217 0  0000            DC      0           SECTOR ADDRESS                 80207110
                        *                                                  80207120
                        *     CONVERT DATA AND PLACE IN PROPER CORE        80207130
                        *     LOCATIONS.                                   80207140
                        *                                                  80207150
0218 0  C05F            LD      K4          PICKUP CONSTANT 4              80207160
0219 0  D05C            STO     CDCT        SET AS CARD COUNT              80207170
021A 00 6500057D        LDX  L1 TEMP        INITIALIZE INPUT               80207180
021C 0  6901            STX   1 SE23+1      * AREA INDEX INSTRN            80207190
                        *                                                  80207200
021D 00 65000000 SE23   LDX  L1 0           SET XR = PROP IN AREA          80207210
021F 0  62F0            LDX   2 -80         INITIALIZE MOVE XR             80207220
                        *                                                  80207230
                        *     TRANSFER 1 CARD TO CONVERSION AREA           80207240
                        *                                                  80207250
0220 0  C100    SE24    LD    1 0           GET WRD FROM IN AREA           80207260
0221 0  D250            STO   2 80          SET IN CONVERT AREA            80207270
0222 0  7101            MDX   1 1           INCREMENT INPUT INDEX          80207280
0223 0  7201            MDX   2 1           SKIP WHEN 1 CO MOVED           80207290
0224 0  70F8            MDX     SE24        MOVE NEXT WORD                 80207300
                        *                                                  80207310
0225 0  69F8            STX   1 SE23+1      SAVE INDEX REG 1               80207320
                        *                                                  80207330
0226 00 44000281        BSI  L  CV12        CONVERT CD TO BINARY           80207340
                        *                                                  80207350
0228 00 C4000002        LD   L  2           PICKUP WORD COUNT LOC          80207360
022A 0  E049            AND     KOOFF       SAVE WORD COUNT                80207370
022B 0  D049            STO     WDCT        STORE WORD COUNT               80207380
022C 00 4C180279        BSC  L  XFRCD,+-    BRANCH IF XFER CARD            80207390
                        *                                                  80207400
                        *     MOVE CARD TO PROPER LOCATION.                80207410
                        *                                                  80207420
022E 0  6209            LDX   2 9           INITIALIZE XR 2                80207430
022F 0  6100            LDX   1 0           INITIALIZE XR 1                80207440
0230 0  6A08            STX   2 SE25+1      SAVE INDEX REG 2               80207450
0231 0  C100            LD    1 0           PICKUP CARD ADDRESS            80207460
0232 00 84000127        A    L  UPPER       ADD IN RELOCATION              80207470
0234 0  D100            STO   1 0           SAVE ADDRESS                   80207480
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0235 00 66800000          LOX  I2 0          SET XR 2 = ADDRESS        80207490
0237 0  6A15              STX   2 SE27+1     SAVE INDEX REG 2          80207500
0238 00 C5000000    SE25  LO   L1 0          LOAD DATA WORD            80207510
023A 0  D200              STO   2 0          PLACE IN PROPER LOC       80207520
023B 0  6A38              STX   2 CRLMT      MAKE AVAIL XR 2           80207530
023C 0  C03A              LO      CRLMT      GET XR 2 SETTING          80207540
023D 00 F4000126          EOR  L  ULIM       CHECK FOR EXCEED CORE     80207550
023F 00 4C200247          BSC  L  SE26,Z     BRANCH IF ADDRS OK        80207560
                     *                                                80207570
                     *    EXCEEDED CORE. GO TO DIAG MON TO RUN        80207580
                     *    PREVIOUSLY LOADED OPTS.                     80207590
                     *                                                80207600
0241 00 44000430          BSI  L  LOG        PRINT EXCEEDED CORE       80207610
0243 0  0527              DC      MSG06      MESSAGE ADDRESS           80207620
                     *                                                80207630
0244 0  1010              SLA     16         CLEAR ACC                 80207640
0245 00 4C0001C6          BSC  L  SF11A      EXIT                      80207650
                     *                                                80207660
                     *    CONTINUE DATA POSITIONING.                  80207670
                     *                                                80207680
0247 0  7201        SE26  MDX    2 1         INCR DATA XR              80207690
0248 0  7101              MDX    1 1         INCR POSITION XR          80207700
0249 00 74FF0275          MDX  L  WDCT,-1    SKIP IF ALL WDS MOVED     80207710
024B 0  70EC              MDX     SE25       GO MOVE NEXT DATA WD      80207720
                     *                                                80207730
                     *    CARD POSITIONED IN CORE. ADD IN RELOCA-     80207740
                     *    TION FACTOR AS REQUIRED.                    80207750
                     *                                                80207760
024C 00 67000000    SE27  LOX  L3 0          SET XR = RELOCATE ADRS    80207770
024E 0  62FA              LDX   2 -6         SET FOR 6 CTRL WORDS      80207780
024F 0  6108              LDX   1 8          8 LOCATIONS PER WORD      80207790
0250 0  C209        SE28  LD    2 9          PICKUP CONTROL WORD       80207800
0251 0  1002              SLA   2            POSITION RELOCATE BIT     80207810
0252 0  D209              STO   2 9          SAVE REMAINDER OF WORD    80207820
0253 00 4C02026F          BSC  L  SE31,C     BRANCH IF RELOCTE REQD    80207830
0255 0  7301        SE29  MDX    3 1         ADD 1 TO ORG ADDRESS      80207840
0256 0  71FF              MDX    1 -1        SKIP IF CTRL WRD CKD      80207850
0257 0  70F8              MDX     SE28       CONTINUE CTRL WRD CK      80207860
0258 0  7201              MDX    2 1         SKIP IF ALL CTRL WRD CKD  80207870
0259 0  70F5              MDX     SE28-1     GO CHECK NXT CONTL WORD   80207880
                     *                                                80207890
                     *    1 CARD OF DATA TRANSFERED TO PROPER         80207900
                     *    LOCATION. CHECK IF 4 DATA CARDS ON THIS     80207910
                     *    SECTOR TRANSFERED.                          80207920
                     *                                                80207930
025A 00 74FF0276          MDX  L  COCT,-1    SKIP IF 4 CRDS XFERD      80207940
025C 0  70C0              MDX     SE23       GO MOVE NEXT CARD.        80207950
                     *                                                80207960
                     *    1 SECTOR OF DATA MOVED. SET UP FOR NEXT     80207970
                     *    SECTOR.                                     80207980
                     *                                                80207990
025D 00 74FF0117          MDX  L  SECCT,-1   DECR SECTOR COUNTER       80208000
025F 0  7008              MDX     SE30       NOT LAST SECTOR GO        80208010
                     *                                                80208020
                     *    ALL SECTORS READ,NO END CARD FOUND.         80208030
                     *                                                80208040
0260 00 44000430          BSI  L  LOG        PRINT PROG LOAD ERR       80208050
0262 0  0537              DC      MSG07      MESSAGE ADDRESS           80208060
                     *                                                80208070
0263 0  1010              SLA     16         CLEAR A REG               80208080
0264 00 D4000177          STO  L  LSTPG      CLEAR LAST PROG SW        80208090
0266 00 4C000183          BSC  L  SE10       GO TO RESELECT PID        80208100
                     *                                                80208110
0268 00 74010217    SE30  MDX  L  SE22+4,1   ADD 1 TO SECTOR BITS      80208120
026A 0  C0AC              LO      SE22+4     PICKUP SECTOR ADDRS       80208130
026B 0  1000              SLA     13         POSITION SECTOR BITS      80208140
026C 00 4C180204          BSC  L  SE20,+-    GO SETUP FOR NXT CYL      80208150
026E 0  70A4              MDX     SE22       GO READ NEXT SECTOR       80208160
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                     *                                                80208170
                     *    ADD RELOCATION FACTOR TO POSITIONED         80208180
                     *    PROGRAM.                                    80208190
                     *                                                80208200
026F 0  C300        SE31  LO    3 0          PICKUP RELOCTABLE WD      80208210
0270 00 84000127          A     L  UPPER     ADD RELOCATION FACTOR     80208220
0272 0  0300              STO   3 0          REPLACE WORD              80208230
0273 0  70E1              MDX     SE29       CONTINUE                  80208240
                     *                                                80208250
                     *                CONSTANTS                       80208260
                     *                                                80208270
0274 0  00FF        K00FF OC      /00FF      CONSTANT HEX 00FF         80208280
0275 0  0000        WDCT  OC      0          CARD WORD COUNT           80208290
0276 0  0000        COCT  OC      0          SECTOR CARD COUNT         80208300
0277 0  0000        CRLMT OC      0          CORE LIMIT CK LOC         80208310
0278 0  0004        K4    OC      4          CONSTANT 4                80208320
                     *                                                80208330
                     *    FOLLOWING SECTION SERVICES THE END CARD     80208340
                     *                                                80208350
0279 00 C4000000    XFRCD LO    L  0         PICKUP CARD ADDRESS       80208360
027B 00 84000178          A     L  K1        ADD 1                     80208370
027D 00 84000127          A     L  UPPER     ADD RELOCATION FACTOR     80208380
027F 00 04000125          STO   L  NLOC      SET AS NEXT PROG LOC      80208390
                     *                                                80208400
0281 00 C4000003          LO    L  3         PICKUP XFER ADDRESS       80208410
0283 00 84000127          A     L  UPPER     ADD RELOCATION FACTOR     80208420
0285 00 D4000118          STO   L  XFER      SET IN XFER VECTOR        80208430
                     *                                                80208440
                     *    EDIT THE PROGRAM JUST LOADED.               80208450
                     *                                                80208460
0287 00 44000327          BSI  L  EDTS       GO SEARCH EDIT TABLE      80208470
0289 00 C4000116          LO   L  ORG        GET PROGRAM ORG ADDRESS   80208480
028B 00 84000127          A    L  UPPER      ADD RELOCATION FACTOR     80208490
028D 0  0001              STO     SE32+1     SET IN LOAD XR COMMAND    80208500
028E 00 67000000    SE32  LOX  L3 0          SET XR 3 = ORG ADDRESS    80208510
                     *                                                80208520
                     *    FIND EDIT INPUT AREA FOR PROGRAM JUST       80208530
                     *    LOADED.                                     80208540
                     *                                                80208550
0290 0  7301        SE33  MDX    3 1         INCREMENT TO SEARCH MLSCF 80208560
0291 0  C300              LO     3 0         GET MLSCF TABLE ENTRY     80208570
0292 00 F400017C          EOR  L  KFFFF      CHECK IF TABLE TERM WORD  80208580
0294 0  4820              BSC     Z          SKIP IF TERM WORD FOUND   80208590
0295 0  70FA              MDX     SE33       GO CHECK NEXT LOCATION    80208600
0296 0  7307              MDX    3 7         SKIP ON WORK LOCATIONS    80208610
0297 00 6500057D          LOX  L1 TEMP       SET XR = LOC OF EDIT DATA 80208620
0299 0  C100        SE34  LO     1 0         PICKUP INDICATOR WORD     80208630
029A 0  1008              SLA     8          REMOVE PID                80208640
0298 0  1808              SRA     8          REPOSITION DATA COUNT     80208650
029C 0  0001              STO     SE35+1     SET IN LOAD XR COMMAND    80208660
029D 00 66000000    SE35  LOX  L2 0          SET XR = EDIT COUNT       80208670
029F 0  C102              LO     1 2         GET EDIT CARD SEQ WORD    80208680
02A0 00 F400017C          EOR  L  KFFFF      CHECK IF TERMINATOR       80208690
02A2 00 4C1802AD          BSC  L  SE37,+-    BRANCH IF TERMINATOR      80208700
                     *                                                80208710
                     *    STORE EDIT DATA IN PROGRAM.                 80208720
                     *                                                80208730
02A4 0  72FD              MDX    2 -3        ADJUST DATA COUNT         80208740
02A5 0  7104              MDX    1 4         SKIP EDIT CONTROL WORDS   80208750
02A6 0  C100        SE36  LO     1 0         GET EDIT WORD             80208760
02A7 0  0300              STO    3 0         SET IN PROGRAM            80208770
02A8 0  7101              MDX    1 1         ADJUST LOAD INDEX         80208780
02A9 0  7301              MDX    3 1         ADJUST STORE INDEX        80208790
02AA 0  72FF              MDX    2 -1        SKIP WHEN ALL DATA MOVED  80208800
02AB 0  70FA              MDX     SE36       GO MOVE NEXT WORD         80208810
02AC 0  70EC              MDX     SE34       GO CHECK NEXT CARD        80208820
                     *                                                80208830
                     *    PROGRAM EDITED. SETUP FOR DM XFER           80208840
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                    *     ON EDIT TERM CARD                                  80208850
                    *                                                        80208860
02A0 CO 6D0001 98   SE37  STX  L1 SE06+1     SAVE LOC OF TERM CARD         80208870
02AF CO 4C0001AD          BSC  L  SE08A       GO DO PROG END XFER           80208880
                    *                                                        80208890
                    *     THIS ROUTINE CONVERTS THE 12/4 FORMAT              80208900
                    *     CARD IMAGES ON DISK,TO CORE IMAGE.                 80208910
                    *                                                        80208920
02B1 C  0000        CV12  DC     0             ENTRY POINT                   80208930
02B2 C  6915              STX    1 CV12D+1     SAVE XR 1                     80208940
02B3 C  6A16              STX    2 CV12D+3     SAVE XR 2                     80208950
02B4 C  6B17              STX    3 CV12D+5     SAVE XR 3                     80208960
02B5 C  6188              LDX    1 -72         SETUP WORD INDEX              80208970
02B6 C  6300              LDX    3 0           SETUP STORE INDEX             80208980
02B7 C  62F0        CV12A LOX    2 -3          SETUP SHIFT INDEX             80208990
02B8 CO C6000202    CV12B LO     L2 SHIFT+3    GET SHIFT INSTRUCTION         80209000
02BA C  0004              STO      CV12C       SET IN ROUTINE                80209010
02BB C  C149              LD     1 73          PICKUP 2ND HALF WORD          80209020
02BC C  18D0              RTE      16          SET IN O REG                  80209030
02BD C  C148              LD     1 72          PICKUP 1ST HALF WORD          80209040
02BE C  1804              SRA      4           POSITION                      80209050
02BF C  1000        CV12C SLA      0           PACK A AND Q                  80209060
02C0 C  D300              STO    3 0           STORE CONVERTED WORD          80209070
02C1 C  7301              MDX    3 1           MODIFY STORE INDEX            80209080
02C2 C  7101              MDX    1 1           MODIFY WORD INDEX             80209090
02C3 C  7201              MDX    2 1           MODIFY SHIFT INDEX            80209100
02C4 C  70F3              MDX      CV12B       GO CONVERT NXT WORD           80209110
02C5 C  7101              MDX    1 1           MODIFY FOR NXT GROUP          80209120
02C6 C  70F0              MDX      CV12A       GO CONVERT NXT GROUP          80209130
                    *                                                        80209140
                    *     CONVERSION COMPLETE                                80209150
                    *                                                        80209160
02C7 00 65000000    CV12D LDX  L1 0             RESTORE XR 1                  80209170
02C9 00 66000000          LDX  L2 0             RESTORE XR 2                  80209180
02CB 00 67000000          LDX  L3 0             RESTORE XR 3                  80209190
02CD 00 4C8002B1          BSC  I  CV12          RETURN TO USER                80209200
                    *                                                        80209210
02CF 0  1084        SHIFT SLT      4           SHIFT LEFT 4 CONSTANT         80209220
02D0 0  1088              SLT      8           SHIFT LEFT 8 CONSTANT         80209230
02D1 0  108C              SLT      12          SHIFT LEFT 12 CONSTANT        80209240
                    *                                                        80209250
                    *     ROUTINE OIRS IS USED TO INPUT THE                  80209260
                    *     LOCATION DIRECTORY,SEARCH IT FOR THE               80209270
                    *     REQUESTED PID AND PLACE THE CONTROL                80209280
                    *     WORDS FOUND IN THE INTERFACE SECTION.IF            80209290
                    *     THE PID IS NOT FOUND IN THE DIRECTORY,             80209300
                    *     AN ERROR MESSAGE WILL OCCUR,AND THE                80209310
                    *     ROUTINE RETURNS TO ALLOW ANOTHER PID TO            80209320
                    *     BE SELECTED                                        80209330
                    *                                                        80209340
02D2 0  0000        OIRS  OC     0             ENTRY POINT                   80209350
                    *                                                        80209360
                    *     SEEK TO LOCATION DIRECTORY CYLINDER                80209370
                    *                                                        80209380
02D3 00 C4000170          LO   L  CYLT8+5      DIRECTORY CYLINDER            80209390
02D5 C  D00C              STO      DIRS2+4     SET IN READ CALL              80209400
02D6 C0 9400016F          S    L   CYLT8+4     SUBTRACT WRK CYL 2            80209410
02D8 0  1803              SRA      3           POSITION SEEK COUNT           80209420
02D9 C  D003              STO      OIRS1+2     SET IN SEEK CALL              80209430
02DA C  D00C              STO      OIRS3+2     SET IN SEEK CALL              80209440
02DB 00 4400C3C6    OIRS1 BSI  L  OSK          GO SEEK DISK                  80209450
02DD 0  0000              OC       0           SEEK COUNT                    80209460
                    *                                                        80209470
02DE 00 4400C3D4    DIRS2 BSI  L  ORD          GO INPUT DIRECTORY            80209480
02E0 C  0141              OC       321         WORD COUNT                    80209490
02E1 C  0578              OC       TEMP-2      INPUT AREA                    80209500
02E2 C  0000              OC       0           SECTOR ADDRESS                80209510
                    *                                                        80209520
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                    *     RETURN ARM TO WORK CYLINDER 2                      80209530
                    *                                                        80209540
02E3 00 74040413          MDX  L  SK+1,4       SET IOCC TO SEEK BACK         80209550
                    *                                                        80209560
02E5 00 4400C3C6    DIRS3 BSI  L  DSK          GO SEEK DISK                  80209570
02E7 0  0000              DC       0           SEEK COUNT                    80209580
                    *                                                        80209590
02E8 00 74FC0413          MDX  L  SK+1,-4      RESTORE IOCC                  80209600
                    *                                                        80209610
                    *     SEARCH DIRECTORY FOR REQUESTED PID.                80209620
                    *                                                        80209630
02EA 0  6101              LDX    1 1           INITIALIZE INDEX 1            80209640
02EB 00 C5000570    DIRS4 LD   L1 TEMP         GET DIRECTORY ENTRY           80209650
02ED 0  18D3              RTE      19          CYL COUNT TO A REG            80209660
02EE 0  180E              SRA      14          POSITION CYL COUNT            80209670
02EF 0  D008              STO      DIRS5+1     SAVE FOR INDEXING             80209680
02F0 0  D008              STO      DIRS7+1     SAVE FOR INDEXING             80209690
02F1 0  1010              SLA      15          CLEAR ACC                     80209700
02F2 0  1088              SLT      11          REPOSITION PID                80209710
02F3 00 F4000178          EOR  L   PIDRO       CHECK IF PID FOUND            80209720
02F5 00 4C200318          BSC  L   DIRS7,Z     BRANCH IF NOT REQ PID         80209730
                    *                                                        80209740
                    *     REQUESTED PID FOUND. TRANSFER CONTROL              80209750
                    *     WORDS TO INTERFACE SECTION.                        80209760
                    *                                                        80209770
02F7 00 66000000    DIRS5 LOX  L2 0            SET XR = CYLINDER CT          80209780
02F9 0  6300              LDX    3 0           INITIALIZE MOVE XR            80209790
02FA 00 C500057D          LD   L1 TEMP         PICKUP WORD 1                 80209800
02FC 0  1801              RTE      17          IMAGE INDICATOR TO A          80209810
02FD 0  180F              SRA      15          POSITION INDICATOR            80209820
02FE 00 D4000119          STO  L   IMG         SAVE IN INTERFACE SECT        80209830
0300 0  18C7              RTE      7           SECTOR COUNT TO A             80209840
0301 0  1808              SRA      11          POSITION COUNT                80209850
0302 00 04000117          STO  L   SECCT       SAVE IN INTERFACE SECT        80209860
0304 0  7101              MDX    1 1           INCR FOR NEXT WORD            80209870
0305 00 C500057D          LD   L1 TEMP         PICKUP ORG ADDRESS            80209880
0307 00 D4000116          STO  L   ORG         SAVE IN INTERFACE SECT        80209890
0309 0  7101        OIRS6 MDX    1 1           INCR FOR NEXT WORD            80209900
030A 00 C500057D          LD   L1 TEMP         PICKUP CYLINDER ADDR          80209910
030C 00 D7000118          STO  L3 STCYL        SAVE IN INTERFACE SECT        80209920
030E 0  7301              MDX    3 1           INCR MOVE XR                  80209930
030F 0  72FF              MDX    2 -1          SKIP IF ALL CYL ADRS MVD      80209940
0310 0  70F8              MDX      OIRS6       MOVE NEXT CYL ADDRS           80209950
0311 0  7101              MDX    1 1           INCR FOR NEXT WORD            80209960
0312 00 C5000570          LO   L1 TEMP         PICKUP TRANSFER ADRS          80209970
0314 00 D4000118          STO  L   XFER        SAVE IN INTERFACE SECT        80209980
                    *                                                        80209990
0316 00 4C8002D2          BSC  I   OIRS        RETURN TO USER                80210000
                    *                                                        80210010
                    *     PREPARE TO LOOK AT NEXT ENTRY.                     80210020
                    *                                                        80210030
0318 00 75000000    OIRS7 MDX  L1 0            ADJUST XR FOR CYL CT          80210040
031A 0  7103              MDX    1 3           ADJUST XR FOR CTL WDS         80210050
031B 0  690A              STX    1 CNT         STORE XR 1 SETTING            80210060
031C 0  C009              LD       CNT         PICKUP XR 1 SETTING           80210070
031D 00 F4000570          EOR  L   TEMP        CHECK IF SEARCH END           80210080
031F 00 4C2002EB          BSC  L   DIRS4,Z     BRANCH IF NOT DONE            80210090
                    *                                                        80210100
                    *     REQUESTED PID IS NOT ON DISK.                      80210110
                    *                                                        80210120
0321 00 44000430          BSI  L   LOG         PRINT  PID NOT ON DISK        80210130
0323 0  0541              OC       MSG08       MESSAGE ADDRESS               80210140
                    *                                                        80210150
0324 00 4C000100          BSC  L   SE13        GO REQUEST NEXT PID           80210160
                    *                                                        80210170
0326 0  0000        CNT   DC       0           WORK LOCATION                 80210180
                    *                                                        80210190
                    *     ROUTINE EOTS IS USED TO INPUT THE EDIT             80210200
```

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                        *     TABLE,SEARCH IT FOR EDIT PERTAINING TO          80210210
                        *     THE SELECTED PID,AND IF EDIT IS FOUND           80210220
                        *     SAVE IN TEMPORARY LOCATION.                     80210230
                        *                                                     80210240
0327 0  0000            EDTS  DC      0           ENTRY POINT                 80210250
                        *                                                     80210260
                        *     SEEK TO WORK CYLINDER 2.                        80210270
                        *                                                     80210280
0328 00 44000384              BSI   L DHM         RETURN ARM TO HOME          80210290
032A 00 C400016F              LD    L CYLT8+4     WORK CYL 2 ADDRESS          80210300
032C 0  D00D                  STD     EDT2+4      SET IN READ CALL            80210310
032D 00 D40003A2              STD   L EDTS9+3     SET IN READ CALL            80210320
032F 0  1803                  SRA     3           POSITION SEEK COUNT         80210330
0330 0  D002                  STO     EDT1+2      SET IN SEEK CALL            80210340
                        *                                                     80210350
0331 00 440003C6        EDT1  BSI   L DSK         SEEK TO WORK CYL 2          80210360
0333 0  0000                  DC      0           SEEK COUNT                  80210370
                        *                                                     80210380
0334 00 7407033A              MDX   L EDT2+4,7    SET READ SECTOR 7           80210390
                        *                                                     80210400
0336 00 440003D4        EDT2  BSI   L DRD         READ SECTOR 7               80210410
0338 0  0001                  DC      1           WORD COUNT                  80210420
0339 0  07FD                  DC      /07FD       INPUT AREA                  80210430
033A 0  0000                  DC      0           SECTOR ADDRESS              80210440
                        *                                                     80210450
                        *     WRITE 321 LOCATIONS,STARTING AT 07FF ON         80210460
                        *     WORK CYLINDER 2 SECTOR 7.                       80210470
                        *                                                     80210480
033C 00 67000141              LDX   L3 321        WRITE WORD COUNT            80210490
033E 00 6F0007FD              STX   L3 /07FD      SET IN OUTPUT AREA          80210500
0340 00 0C000416              XIO   L WRT         ISSUE WRITE COMMAND         80210510
0341 00 0C00040C        EDT3  XIO   L DSN         SENSE STATUS                80210520
0343 0  1001                  SLA     1           POSITION OP COMP BIT        80210530
0344 00 4C100341              BSC   L EDT3,-      BRANCH IF NOT OP COMP       80210540
0346 00 0C00040E              XIO   L DSNR        RESET STATUS                80210550
0348 00 E400040E              AND   L DSNR        CHECK FOR ERROR             80210560
034A 00 4C180351              BSC   L EDT4,+-     BRANCH IF NO ERROR          80210570
                        *                                                     80210580
034C 00 44000430              BSI   L LDG         GO PRINT WRITE ERROR        80210590
034E 0  0551                  DC      MSG09       MESSAGE ADDRESS             80210600
                        *                                                     80210610
034F 0  340D            W340D DC      /340D       DISK WRITE ERROR            80210620
0350 0  70D7                  MDX     EDTS+1      TRY AGAIN                   80210630
                        *                                                     80210640
                        *     INPUT EDIT TABLE.                               80210650
                        *                                                     80210660
0351 00 C4000170        EDT4  LD    L CYLT8+5     EDIT TABLE CYLINDER         80210670
0353 0  D010                  STD     EDTS2+3     SET IN READ CALL            80210680
0354 00 9400016F              S     L CYLT8+4     SUB WORK CYL 2 ADDRS        80210690
0356 0  1803                  SRA     3           POSITION SEEK COUNT         80210700
0357 0  D002                  STD     EDTS1+1     SET IN SEEK CALL            80210710
0359 0  D014                  STD     EDTS4+1     SET IN SEEK CALL            80210720
                        *                                                     80210730
035A 0  406C            EDTS1 BSI     DSK         SEEK TO EDIT CYL            80210740
035B 0  0000                  DC      0           SEEK COUNT                  80210750
                        *                                                     80210760
035C 00 74030364              MDX   L EDTS2+3,3   SET FOR READ SECT 3         80210770
035E 0  63FD                  LDX     3 -3        SET READ COUNT              80210780
035F 00 C70003AA        EDT5  LD    L3 EDADR+3    GET INPUT ADDRESS           80210790
0361 0  D002                  STO     EDTS2+2     SET IN READ CALL            80210800
                        *                                                     80210810
0362 0  4072            EDTS2 BSI     DRD         READ 1 SECTOR               80210820
0363 0  0141                  DC      321         WORD COUNT                  80210830
0364 0  0000                  DC      0           INPUT AREA                  80210840
0365 0  0000                  DC      0           SECTOR ID                   80210850
                        *                                                     80210860
0366 00 74FF0364              MDX   L EDTS2+3,-1  ADJUST FOR NEXT READ        80210870
0368 0  1000                  NOP                                             80210880
```



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                              MDX   3 1           SKIP IF 3 READS             80210890
0369 0  70F4                  MDX     * EDT5      READ NEXT SECTOR            80210900
                        *                                                     80210910
                        *     RETURN DISK TO WORK CYLINDER 2.                 80210920
                        *                                                     80210930
036A 00 74040413              MDX   L SK+1,4      SET IOCC TO SEEK BACK       80210940
                        *                                                     80210950
036C 0  4059            EDTS4 BSI     DSK         GO SEEK DISK                80210960
036D 0  0000                  DC      0           SEEK COUNT                  80210970
                        *                                                     80210980
036E 00 74FC0413              MDX   L SK+1,-4     RESTORE SEEK IOCC           80210990
                        *                                                     80211000
                        *     SEARCH TABLE FOR REQUESTED PID EDIT.            80211010
                        *                                                     80211020
0370 0  6101                  LDX     1 1         INITIALIZE XR 1             80211030
0371 0  6200                  LDX     2 0         INITIALIZE XR 2             80211040
0372 00 C400057D              LD    L TEMP        PICKUP TBL ENTRY CT         80211050
0374 0  D030                  STD     ECT         SAVE COUNT                  80211060
0375 00 F4000178              EDR   L K1          CK FOR NO EDIT ENTRY        80211070
0377 0  4818                  BSC     +-          SKIP IF ENTRIES             80211080
0378 0  7024                  MDX     EDTSA       GO TO EXIT                  80211090
0379 0  10A0            EDTS5 SLT     32          CLEAR A AND Q               80211100
037A 00 C500057D              LD    L1 TEMP       PICKUP TABLE ENTRY          80211110
037C 0  18C8                  RTE     8           POSITION PID SAVE CT        80211120
037D 00 F4000178              EOR   L PIDRQ       CHECK IF EDIT = PID         80211130
037F 00 4C200392              BSC   L EDTS7,Z     BRANCH IF NOT PROP PID      80211140
                        *                                                     80211150
                        *     EDIT FOR REQUESTED PID FOUND.SAVE EDIT          80211160
                        *     ENTRIES                                         80211170
                        *                                                     80211180
0381 0  1010                  SLA     16          CLEAR ACC                   80211190
0382 0  1088                  SLT     8           RETRIEVE CARD ENTRY CT      80211200
0383 0  D001                  STO     EDTS6+1     SAVE FOR INDEXING           80211210
0384 00 67000000        EDTS6 LDX   L3 0          SET XR = NMR CARD ENT       80211220
0386 0  7301                  MDX     3 1         ADJUST FOR CNTRL WRD        80211230
0387 00 C500057D              LD    L1 TEMP       PICKUP EDIT WORD            80211240
0389 00 D600057D              STD   L2 TEMP       SAVE EDIT WORD              80211250
038B 0  7201                  MDX     2 1         INCR XR FOR NXT WORD        80211260
038C 0  7101                  MDX     1 1         INCR XR FOR NXT WORD        80211270
038D 0  73FF                  MDX     3 -1        SKIP IF ALL WDS MOVED       80211280
038E 0  70F8                  MDX     EDTS6+3     GO MOVE NEXT WORD           80211290
                        *                                                     80211300
038F 00 6C00017A              STX   L EDTSW       SET EDIT SWITCH             80211310
0391 0  7006                  MDX     EDTS8+3     GO CHECK IF DONE            80211320
                        *                                                     80211330
                        *     EDIT JUST CHECKED WAS NOT FOR REQUESTED         80211340
                        *     PID. SET UP TO LOOK AT NEXT TABLE ENTRY         80211350
                        *                                                     80211360
0392 0  1010            EDTS7 SLA     16          CLEAR ACC                   80211370
0393 0  1088                  SLT     8           RETRIEVE CARD ENTRY CT      80211380
0394 0  D001                  STD     EDTS8+1     SAVE FOR INDEXING           80211390
0395 00 75000000        EDTS8 MDX   L1 0          MOD XR 1 BY CARD COUNT      80211400
0397 0  7101                  MDX     1 1         ADJUST XR FOR CTRL WRD      80211410
0398 0  690D                  STX     1 XRSV      MAKE AVAILABLE XR DATA      80211420
0399 0  C00C                  LD      XRSV        PICKUP XR SETTING           80211430
039A 0  F00A                  EDR     ECT         CHECK IF ALL ENTRIES        80211440
0398 00 4C200379              BSC   L EDTS5,Z     BRANCH IF NOT DONE          80211450
                        *                                                     80211460
039D 00 7407D3A2        EDTSA MDX   L EDTS9+3,7   SET TO READ SECTOR 7        80211470
                        *                                                     80211480
039F 0  4034            EDTS9 BSI     DRD         GO INPUT SECTOR 7           80211490
03A0 0  0141                  DC      321         WORD COUNT                  80211500
03A1 0  07FD                  DC      /07FD       INPUT AREA                  80211510
03A2 0  0000                  DC      0           SECTOR ID                   80211520
                        *                                                     80211530
03A3 00 4C800327              BSC   I EDTS        RETURN TO USER              80211540
                        *                                                     80211550
03A5 0  0000            ECT   DC      0           TABLE ENTRY COUNT           80211560
```

SELECT/EXECUTE SECTION (CARD)

```
03A6 0  000D        XRSV  DC      0           XR STORAGE                  8D211570
                    *                                                     8D211580
03A7 0  07F8        EDADR DC      TEMP+638    SECTOR 3 ID AREA            8D211590
03A8 D  D6B8              DC      TEMP+318    SECTOR 2 ID AREA            8D211600
03A9 D  D578              DC      TEMP-2      SECTOR 1 ID AREA            8D211610
                    *                                                     8D211620
                    *     THIS ROUTINE CHECKS THE DISK DRIVE FOR          8D211630
                    *     A READY CONDITION.                              8D211640
                    *                                                     8D211650
03AA D  000D        ORDY  DC      0           ENTRY POINT                 8D211660
03AB 0  0862              XIO     DSNR        SENSE DISK STATUS           8D211670
03AC 0  1002              SLA     2           POSITION READY BIT          8D211680
03AD 00 4C9003AA          BSC  I  ORDY,-      RETURN TO USER IF READY     8D211690
03AF 0  1001              SLA     1           POSITION BUSY BIT           8D211700
03B0 00 4C2803AB          BSC  L  DRDY+1,+Z   BRANCH IF BUSY              8D211710
03B2 0  3405        W34D5 OC      /3405       DISK NOT READY              8D211720
03B3 D  70F7              MDX     DRDY+1      CHECK AGAIN                 8D211730
                    *                                                     8D211740
                    *     THIS ROUTINE SEEKS THE 2310 TO ITS HOME         8D211750
                    *     POSITION.                                       8D211760
                    *                                                     8D211770
03B4 0  0000        DHM   DC      0           ENTRY POINT                 8D211780
03B5 0  6304              LDX   3 4           SET RETRY INDEX             8D211790
03B6 0  0857        DHM1  XIO     DSNR        SENSE/RESET STATUS          8D211800
03B7 0  D00D              STO     SKST        SAVE STATUS                 8D211810
03B8 0  1004              SLA     4           POSITION HOME BIT           8D211820
03B9 00 4C4803B4          BSC  I  DHM,+Z      EXIT IF DISK HOME           8D211830
03BB 0  73FF              MDX   3 -1          SKIP IF 3RD TRY             8D211840
03BC 0  7002              MDX     DHM2        GO ISSUE SEEK COMMAND       8D211850
03BD 0  C007              LD      SKST        RETRIEVE LAST DSW           8D211860
03BE 0  3406        W3406 DC      /3406       DISK DID NOT INDICATE HOME  8D211870
03BF 0  0850        DHM2  XIO     HM          SEEK TO HOME                8D211880
03C0 0  0848              XIO     DSN         SENSE DISK STATUS           8D211890
03C1 0  1001              SLA     1           POSITION OP CMPL BIT        8D211900
03C2 00 4C1003C0          BSC  L  DHM2+1,-    BRANCH IF NOT COMPLETE      8D211910
03C4 0  70F1              MDX     DHM1        GO CHECK HOME BIT           8D211920
03C5 0  D000        SKST  OC      0           OSW HOLD LOCATION           8D211930
                    *                                                     8D211940
                    *     THIS RDUTINE SEEKS THE DISK TO THE              8D211950
                    *     DESIRED CYLINDER.                               8D211960
                    *                                                     8D211970
03C6 D  000D        DSK   DC      0           ENTRY POINT                 8D211980
03C7 00 C48003C6          LD    1 DSK         PICKUP SEEK COUNT           8D211990
03C9 0  0048              STO     SK          PLACE IN SEEK COMMAND       80212000
03CA D  0847              XIO     SK          ISSUE SK                    80212010
03CB 0  0840        DSK1  XIO     DSN         SENSE DISK STATUS           80212020
03CC 0  1001              SLA     1           POSITION OP CMPL BIT        80212030
03CD 00 4C1003CB          BSC  L  DSK1,-      BRANCH IF NOT OP CMPL       80212040
03CF 0  083E              XIO     DSNR        SENSE/RESET STATUS          80212050
03D0 00 74D1D3C6          MDX  L  DSK,1       MODIFY RETURN               80212060
03D2 00 4C80D3C6          BSC  I  DSK         RETURN TO USER              80212070
                    *                                                     80212080
                    *     THIS ROUTINE READS THE DISK AND CHECKS          80212090
                    *     FOR THE PROPER SECTOR ID.                       80212100
                    *                                                     80212110
0304 0  0000        DRD   DC      0           ENTRY POINT                 80212120
03D5 0  692C              STX   1 DRD3+1      SAVE INDEX REG 1            80212130
0306 0  6A2F              STX   2 DRD3+5      SAVE INDEX REG 2            80212140
03D7 0  682F              STX   3 DRD3+5      SAVE INDEX REG 3            80212150
03U8 0  6303              LDX   3 3           SET RETRY INDEX             80212160
0309 0D 6680D304          LDX   I2 DRD        SET XR = CALL ADDRS         80212170
03DB D  C2D1              LD    2 1           GET INPUT AREA              80212180
03DC 0  0037              STO     RO          SET IN READ COMMAND         80212190
030U 0  0002              STO     *+2         SET IN STORE INSTR          80212200
03UE 0  C200              LD    2 0           GET SCAN CTL + WD CT        80212210
03DF 00 04000000          STO   L 0           SET IN INPUT TABLE          80212220
03E1 0  C202              LD    2 2           PICKUP SECTOR ID            80212230
03E2 0  1883              SRT     3           SAVE SECTOR BITS            80212240
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SELECT/EXECUTE SECTION (CARD)

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03E3 D  CD31              LD      RD+1        PICKUP READ COMMAND         80212250
03E4 0  18D3              SRA     3           REMOVE OLD SECTR BIT        80212260
03E5 0  1083              SLT     3           ADD NEW SECTOR BITS         80212270
03E6 D  D02E              STO     RD+1        UPDATE READ IOCC            80212280
03E7 0  D82C        DRD1  XIO     RD          READ DISK                   80212290
03E8 D  D823              XIO     OSN         SENSE DISK STATUS           80212300
03E9 D  1D01              SLA     1           POSITION OP CMP BIT         80212310
03EA D0 4C1DD3E8          BSC  L  ORD1+1,-    BRANCH IF NOT OP CMP        80212320
03EC D  D821              XIO     DSNR        SENSE/RESET STATUS          80212330
03E0 0  E02D              AND     DSNR        CHECK FOR ERROR BITS        80212340
03EE 00 4C1803F6          BSC  L  DRD2,+-     BRANCH IF NO ERRORS         80212350
03FD 0  73FF              MDX   3 -1          SKIP IF 3RD TRY             80212360
03F1 0  70F5              MDX     DRD1        TRY AGAIN                   80212370
03F2 0  403D              BSI     LOG         PRINT READ ERROR            80212380
03F3 0  050F              OC      MSG02       MESSAGE ADDRESS             80212390
03F4 D0 4C00041A          BSC  L  ERR         GO TO ERROR SECTION         80212400
03F6 0D 65A0D414    DRD2  LOX   I1 RD          SET XR = INPUT AREA         80212410
03F8 D  C2D2              LD    2 2           GET EXPECTED SID            80212420
03F9 0  F101              EOR   1 1           CHECK AGAINST ACTUAL        80212430
03FA 00 4C180401          BSC  L  DRD3,+-     BRANCH IF PROPER SID        80212440
03FC 0  73FF              MDX   3 -1          SKIP IF 3RD TRY             80212450
03F0 0  70E9              MDX     DRD1        REREAD SECTOR               80212460
03FE D  4D31              BSI     LOG         PRINT WRONG SECTOR          80212470
03FF D  D519              OC      MSG03       MESSAGE ADDRESS             80212480
0400 0  7019              MDX     ERR         GO TO ERROR SECTION         80212490
0401 00 65000000    DRD3  LOX   L1 0           RESTORE XR 1                80212500
0403 D0 66000000          LDX   L2 0           RESTORE XR 2                80212510
0405 D0 67000000          LOX   L3 0           RESTORE XR 3                80212520
0407 D0 740303D4          MDX  L  DRD,3        MODIFY RETURN               80212530
0409 00 4C8003D4          BSC  I  DRD          RETURN TO USER              80212540
                    *                                                     80212550
                    *     THE FOLLOWING WORDS ARE THE DISK IOCC'S         80212560
                    *                                                     80212570
040C      0000            BSS  E  0           ALIGN TO EVEN ADDRESS       80212580
                    *                                                     80212590
040C 0  0000        OSN   OC      0           DISK SENSE IOCC             80212600
040D 0  0700              OC      /D700                                   80212610
040E 0  87C0        DSNR  OC      /87C0       DISK SENSE/RESET IOCC       80212620
040F 0  07D1              OC      /0701                                   80212630
0410 0  0DCA        HM    DC      202         SEEK HOME IOCC              80212640
0411 0  0404              DC      /0404                                   80212650
0412 0  0000        SK    DC      0           SEEK OUT IOCC               80212660
0413 D  D4D0              OC      /040D                                   80212670
0414 0  0000        RO    OC      0           DISK READ IOCC              80212680
0415 0  D600              DC      /0600                                   80212690
0416 0  07FD        WRT   DC      /07F0       DISK WRITE COMMAND          80212700
0417 0  0507              DC      /D5D7       COMMAND - SECTOR 7          80212710
0418 D  00D0        MOD4  DC      0           MOD 4 CHECK IOCC            80212720
0419 D  D68D              DC      /0680                                   80212730
                    *                                                     80212740
                    *     THIS ROUTINE IS ENTERED ON A DISK READ,         80212750
                    *     OR WRONG SECTOR ERROR. THE ERROR WILL           80212760
                    *     HAVE BEEN PRINTED ON DETECTION. THIS            80212770
                    *     ROUTINE REINITIALIZES AND SETS UP TO            80212780
                    *     SELECT THE SAME OR A NEW PIU. IF IT IS          80212790
                    *     DESIRED TO RUN THOSE PROGRAMS ALREADY           80212800
                    *     LOADED,SET DATA SWS TO FF00.                    80212810
                    *                                                     80212820
041A 0  1010        ERR   SLA     16          CLEAR ACC                   80212830
0418 00 D400009A          STO  L  XFRSW       CLEAR XFER SW               80212840
0410 00 D40D017A          STO  L  EDTSW       CLEAR EDIT AVAIL SW         80212850
041F 00 D4000177          STO  L  LSTPG       CLEAR LAST PROG SW          80212860
0421 00 D400D115          STO  L  TRMSW       CLEAR TERM INDICATOR        80212870
0423 0  340A        W340A DC      /340A       INDICATE ERR PROCEDURE      80212880
0424 00 0C00017E          XIO  L  SNSW        SENSE BIT SWITCHES          80212890
0426 D  1888              SRT     8           POSITION TERM BITS          80212900
0427 00 D40DD177          STO  L  LSTPG       SAVE IN LAST PROG SW        80212910
0429 0  1088              SLT     8           REPOSITION                  80212920
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042A G  F004          EOR     KFF00      CHECK IF RUN LOADED PROG     8D212930
042B 00 4C1801C6      BSC  L  SE11A,+-   BRANCH IF SNS FF00           80212940
0420 00 4C0001C0      BSC  L  SE12       GO REDUEST NXT SELECTN       80212950
                      *                                               8D212960
042F 0  FF00          KFF00 OC    /FF00  CONSTANT                     8D212970
                      *                                               8D21298D
                      ********************************************    8021299D
                      *                LOG ROUTINE                 *  80213000
                      ********************************************    80213010
                      *                                               8021302D
D430 0  0000          LOG   OC    0                                SE  8D213030
                      *                                               80213040
0431 C  681A          LOG01 STX   3 LOG06+1  SAVE IX 3                  80213050
0432 C  6A1B                STX   2 LOG06+3  SAVE INDEX 2               80213060
0433 E0 C4000172            LO    L CYLTB+7  GET OUTPUT DEV INDICATOR    80213070
0435 E0 4C180453            BSC   L TWRTR,+- BRANCH IF TYPEWRITER       80213080
                      *                                               80213090
0437 00 C4800430            LD    I LOG      GET MESSAGE ADDRESS        80213100
0439 0  0054                STO     PRWRT    SET IN IOCC                8D213110
                      *                                               80213120
043A 0  084F          LOG02 XIO     PRSNS    CHECK PRINTER READY        80213130
043B E0 4C040441            BSC   L W3407,E  BRANCH IF NOT READY        8C213140
0430 0  1801                SRA     1                                   80213150
043E 00 4C040443            BSC   L W3408,E  BRANCH IF BUSY             80213160
0440 0  7004                MDX     LOG05    READY AND NOT BUSY         80213170
                      *                                               80213180
0441 0  3407          W3407 DC      /3407    1443 NOT READY             80213190
0442 0  70F7                MDX     LOG02    CHECK AGAIN                80213200
                      *                                               80213210
0443 0  3408          W3408 DC      /3408    1443 BUSY                  8D213220
0444 0  70F5                MDX     LOG02    CHECK AGAIN                80213230
                      *                                               80213240
0445 0  0848          LOG05 XIO     PRWRT    OUTPUT MESSAGE             80213250
                      *                                               80213260
0446 0  0845                XIO     PRSN     CHECK FOR OP COMPLT        80213270
0447 0  1002                SLA     2                                   8D213280
0448 0  4810                BSC     -                                   80213290
0449 0  70FC                MDX     *-4                                 8D21330D
044A 0  083F                X1D     PRSNS    RESET OSW                  80213310
                      *                                               80213320
                      *          PRINTING COMPLETE                    80213330
                      *                                               80213340
044B 00 67000000      LOG06 LDX   L3 0       RESTURE IX 3               80213350
044D 00 66000000            LOX   L2 0       RESTORE INDEX 2            8D213360
044F 00 74010430            MDX   L LOG,I    BUMP RETURN                80213370
                      *                                               80213380
0451 00 4C800430            BSC   I LOG      RETURN TO USER          SX 80213390
                      *                                               80213400
0453 0  1010          TWRTR SLA     16                                  8D213410
0454 0  0032                STO     WRDSW                               80213420
0455 0  083A                XIO     TWSNS    CHECK IF TYPEWRITER        80213430
0456 0  1005                SLA     5        READY                      80213440
0457 D  180F                SRA     15                                  80213450
0458 00 4C18045C            BSC   L TWR01,+-                            8D213460
                      *                                               8D213470
045A 0  3409          W3409 DC      /34D9    1053/1816 NOT READY        80213480
045B 0  70F9                MDX     TWRTR+2                             8D21349D
                      *                                               8D213500
045C 0  C029          TWR01 LO      TWRTO    CARRAIGE RETURN AND        80213510
045D D  002A                STO     IOARA    LINE SPACE TO IO ARA       80213520
                      *                                               8021353D
045E D  0833                XID     TWWRT    CARG RETURN/LINE SP        8D213540
                      *                                               80213550
045F D  0830                XIO     TWSNS    HANG TILL NOT BUSY         80213560
0460 0  180B                SRA     11                                  8D21357D
0461 0  4804                BSC     E                                   80213580
0462 0  70FC                MDX     *-4                                 8D213590
                      *                                               8D2136D0
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0463 DD C48DD430      LD    I LOG      GET WORD COUNT LOC          80213610
0465 D  D001          STO     *+1      SET IN LDX INSTRUCT         80213620
0466 D0 66800000      LDX   I2 0       SET XR 2 TO WORD C          80213630
0468 0  6301          LDX     3 1      BYPASS 1443 WORD COUNT      80213640
0469 00 C480D430      LO    I LOG      SET MESSAGE ADDRESS         80213650
046B 0  0001          STO     TWRD2+1                              80213660
                      *                                           80213670
046C D0 C7000D00      TWRD2 LD    L3 0   GET WORD TO PRINT           80213680
046E 0  0057          STO     CODWO    SET IN CONVERSION RT        80213690
                      *                                           80213700
                      ********************************************  80213710
D46F D  4024          BSI     COOCV    GO CONVERT 43 TO TW         80213720
                      ********************************************  80213730
                      *                                           80213740
D470 0  C055          LO      CODWD    FETCH CONVERTED WORD        80213750
0471 0  0016          STO     IOARA                                80213760
                      *                                           80213770
                      *                OUTPUT A CHARACTER          80213780
                      *                                           80213790
0472 D  081F          XIOWR XIO     TWWRT    WRITE CHARACTER        80213800
                      *                                           80213810
D473 0  D81C          XIOSN XIO     TWSNS    HANG ON BUSY           80213820
0474 0  1808                SRA     11                             80213830
0475 0  4804                BSC     E                              80213840
0476 0  70FC                MDX     XIOSN    BUSY                   80213850
                      *                                           80213860
                      *          CHECK IF 1ST 1/2 WORD            80213870
                      *                                           80213880
D477 D  C00F                LO      WROSW    GET 1/2 WORD SWITCH    80213890
0478 0  4804                BSC     E                              80213900
0479 0  7006                MDX     TWR03    GO SET UP NEXT WORD    80213910
                      *                                           80213920
                      *          SET UP FOR 2ND 1/2 WORD          80213930
                      *                                           80213940
047A 0  C000                LD      IOARA                          80213950
047B 0  1008                SLA     8        POSITION 2ND 1/2 WO   80213960
047C D  D008                STO     IOARA                          80213970
047D 00 74010487            MDX   L WROSW,1  BUMP WORD SWITCH       80213980
047F 0  70F2                MDX     XIOWR    GO WRITE 2ND 1/2 WD    80213990
                      *                                           80214000
                      *          SET UP FOR NEXT WORD             80214010
                      *                                           80214020
D48D 0  73D1          TWR03 MDX   3 1        NEXT WORD INDEX        80214030
0481 0D 74010487            MDX   L WRDSW,1  BUMP WORD SWITCH       80214040
0483 0  72FF                MDX     2 -1     SKIP IF MESSAGE CMPL   80214050
0484 0  70E7                MDX     TWR02    GO GET NEXT WORD       80214060
0485 D  70C5                MDX     LOG06    EXIT                   80214070
                      *                                           80214080
                      *                LOG   CONSTANTS            80214090
                      *                                           80214100
0486 D  8103          TWRTD OC      /8103    LINE SP/CARRAIGE RTN   80214110
0487 0  0000          WRDSW OC      0        1/2 WORD SWITCH        80214120
0488 0  0000          IOARA OC      0        OUTPUT AREA            80214130
                      *                                           80214140
D48A    0000                BSS   E  D                           80214150
                      *                                           80214160
048A D  0000          PRSNS DC      /DD0D    PRINTER  SENSE IOCC    80214170
048B D  3701                DC      /37D1                          80214180
048C 0  0000          PRSN  DC      0        NON RESET SENSE       80214190
048D 0  3700                DC      /3700                          80214200
048E 0  0000          PRWRT OC      /0000    PRINTER  WRITE IOCC   80214210
048F 0  3500                OC      /3500                          80214220
D490 0  0000          TWSNS DC      /0000    TYPEWTR  SENSE IOCC   80214230
0491 0  0F03                DC      /0F03                          80214240
0492 0  D488          TWWRT OC      IOARA    TYPEWTR  WRITE IOCC   80214250
0493 0  0902                OC      /0902                          80214260
                      *                                           8021427D
                      ********************************************  8021428D
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                        *                1443 CODE TO 1816/1053   *      80214290
                        *                CODE CONVERSION ROUTINE  *      80214300
                        ****************************************       80214310
                        *                                               80214320
0494 0  0000            CODCV DC     0                                  SE 80214330
0495 0  6928                  STX    1 CDOC4+1      SAVE INDEX REGS      80214340
0496 0  6A29                  STX    2 CDOC4+3                           80214350
0497 0  662A                  STX    3 CDDC4+5                           80214360
0498 0  0833                  STD      AQ2          SAVE A AND Q         80214370
                        *                                               80214380
0499 0  1010                  SLA      16           CLEAR LEFT HALF WORD 80214390
049A 0  D02C                  STO      LHIND        *INDICATOR           80214 00
049B 0  6300                  LDX    3 0                                 80214410
                        *                                               80214420
049C 0  C029            CODC1 LD       CODWO        GET WORD TO CONVERT  80214430
049D 0  1890                  SRT      16           SET IN Q             80214440
049E 0  C028                  LD       LHIND                             80214450
049F 0  4820                  BSC      Z            SKIP IF LEFT HALF    80214460
04A0 0  1088                  SLT      8            POSITION RIGHT HALF  80214470
                        *                                               80214480
04A1 0  1010                  SLA      16                                80214490
04A2 0  1084                  SLT      4            ZONE TO ACCUM        80214500
04A3 0  D024                  STO      CODOO                             80214510
04A4 00 658004C8              LDX   11 CO000        IX 1 = ZONE          80214520
                        *                                               80214530
04A6 0  1010                  SLA      16                                80214540
04A7 0  1084                  SLT      4            DIGIT TO ACCUM       80214550
04A8 0  001F                  STO      CDDOO                             80214560
04A9 00 668004C8              LDX   12 CODOO        IX 2 = DIGIT         80214570
                        *                                               80214580
04AB 00 C50004CE              LD    L1 ZONE         GET ZONE TABLE ADDRS 80214590
04AD 0  D001                  STD      CODC2+1      SET IN CONVERSION WD 80214600
                        *                                               80214610
04AE 00 C6000000        COOC2 LD    L2 0            GET CONVERTED CODE   80214620
04B0 00 D70004C9              STO   L3 CODOI                            80214630
                        *                                               80214640
04B2 0  C014                  LD       LHINO                             80214650
04B3 00 4C2004B9              BSC   L  COOC3,Z      BRNCH IF RIGHT HALF  80214660
04B5 00 7401047F              MDX   L  LHIND,1                          80214670
04B7 0  7301                  MDX    3 1                                80214680
04B8 0  70E3                  MDX      CODC1        GO CONVERT RIGHT HLF 80214690
                        *                                               80214700
04B9 0  C00F            CODC3 LD       CODOI        PACK CONVERTED CODES 80214710
04BA 0  1008                  SLA      8                                 80214720
04BB 0  F80E                  DR       CDDO2                             80214730
04BC 0  D009                  STO      COOWD                             80214740
                        *                                               80214750
04BD 00 65000000        CODC4 LDX   L1 0              RESTORE INDEX REGS   80214760
04BF 00 66000000              LDX   L2 0                                  80214770
04C1 00 67000000              LDX   L3 0                                  80214780
04C3 0  C308                  LOO      AQ2          RESTORE A AND Q      80214790
                        *                                               80214800
04C4 00 4C800494              BSC   I  CODCV        RETURN TO USER       SX 80214810
                        *                                               80214820
                        *                                               80214830
                        *                CONSTANTS                      80214840
                        *                                               80214850
04C6 0  0000            COOWD DC       0            WORD LOCATION        80214860
04C7 0  0000            LHIND DC       0            LEFT HALF INDICATOR  80214870
04C8 0  0000            CODOO DC       0            WORK AREA            80214880
04C9 0  0000            CODOI DC       0            CONVERTED LH CHARACT 80214890
04CA 0  0000            CODO2 DC       0            CONVERTED RH CHARACT 80214900
04CC    0000                  BSS   E  0                                 80214910
04CC 0  0000            AQ2   DC       0            A AND Q STORAGE      80214920
04CD 0  0000                  DC       0                                 80214930
                        *                                               80214940
                        *                                               80214950
                        *                1443 TO 1816/1053  CODE        80214960
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                        *                CONVERSION TABLES              80214970
                        *                                               80214980
04CE 0  04D2            ZONE  DC       ZONEN        ND ZONE              80214990
04CF 0  04DO                  DC       ZONE1        0 ZONE               80215000
04D0 0  04E8                  DC       ZONE2        11 ZONE              80215010
04D1 0  04F2                  DC       ZONE3        12 ZONE              80215020
                        *                                               80215030
04D2 0  0021            ZONEN DC       /0021        SPACE                80215040
04D3 0  00FC                  DC       /00FC        1                    80215050
04D4 0  00D8                  DC       /00D8        2                    80215060
04D5 0  00DC                  DC       /00DC        3                    80215070
04D6 0  00F0                  DC       /00F0        4                    80215080
04D7 0  00F4                  DC       /00F4        5                    80215090
04D8 0  00D0                  DC       /0000        6                    80215100
04D9 0  0004                  DC       /0004        7                    80215110
04DA 0  00E4                  DC       /00E4        8                    80215120
04DB 0  00E0                  DC       /00E0        9                    80215130
04DC 0  00C4                  DC       /00C4        0                    80215140
04DD 0  0000            ZONE1 DC       0                                 80215150
04DE 0  0000                  DC       0                                 80215160
04DF 0  009A                  DC       /009A        S                    80215170
04E0 0  009E                  DC       /009E        T                    80215180
04E1 0  0082                  DC       /0082        U                    80215190
04E2 0  0086                  DC       /0086        V                    80215200
04E3 0  0092                  DC       /0092        W                    80215210
04E4 0  0096                  DC       /0096        X                    80215220
04E5 0  00A6                  DC       /00A6        Y                    80215230
04E6 0  00A2                  DC       /00A2        Z                    80215240
04E7 0  0021                  DC       /0021        SPACE                80215250
04E8 0  0000            ZONE2 DC       0                                 80215260
04E9 0  007E                  DC       /007E        J                    80215270
04EA 0  005A                  DC       /005A        K                    80215280
04EB 0  005E                  DC       /005E        L                    80215290
04EC 0  0072                  DC       /0072        M                    80215300
04ED 0  0076                  DC       /0076        N                    80215310
04EE 0  0052                  DC       /0052        D                    80215320
04EF 0  0056                  DC       /0056        P                    80215330
04F0 0  0066                  DC       /0066        Q                    80215340
04F1 0  0062                  DC       /0062        R                    80215350
04F2 0  0000            ZONE3 DC       0                                 80215360
04F3 0  003E                  DC       /003E        A                    80215370
04F4 0  001A                  DC       /001A        B                    80215380
04F5 0  001E                  DC       /001E        C                    80215390
04F6 0  0032                  DC       /0032        D                    80215400
04F7 0  0036                  DC       /0036        E                    80215410
04F8 0  0012                  DC       /0012        F                    80215420
04F9 0  0016                  DC       /0016        G                    80215430
04FA 0  0026                  DC       /0026        H                    80215440
04FB 0  0022                  DC       /0022        I                    80215450
04FC 0  0086                  DC       /0086        Q ERROR              80215460
04F0 0  0000                  DC       /000D        PERIOD               80215470
                        *                                               80215480
                        *     PRINT MESSAGES. 1442 CODED.               80215490
                        *                                               80215500
                        *     C006 SELECT PID IN DATA SWS 00XX          80215510
                        *                                               80215520
04FE 0  0010            MSG01 DC       16           WORD COUNT           80215530
04FF 0  330A                  DC       /330A        CO                   80215540
0500 0  0A06                  DC       /0A06        06                   80215550
0501 0  0012                  DC       /0012         S                   80215560
0502 0  3523                  DC       /3523        EL                   80215570
0503 0  3533                  DC       /3533        EC                   80215560
0504 0  1300                  DC       /1300        T                    80215590
0505 0  2739                  DC       /2739        PI                   80215600
0506 0  3400                  DC       /3400        O                    80215610
0507 0  3925                  DC       /3925        IN                   80215620
0508 0  0034                  DC       /0034         D                   80215630
0509 0  3113                  DC       /3113        AT                   80215640
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050A 0  3100          DC      /3100     A
050B 0  1216          DC      /1216     SW
050C 0  1200          DC      /1200     S
050D 0  0A0A          DC      /0A0A     00
050E 0  1717          DC      /1717     XX
                      *
                      *       E008 DISK READ ERR
                      *
050F 0  0009  MSG02   DC      9         WORD COUNT
0510 0  350A          DC      /350A     E0
0511 0  0A08          DC      /0A08     08
0512 0  0034          DC      /0034      D
0513 0  3912          DC      /3912     1S
0514 0  2200          DC      /2200     K
0515 0  2935          DC      /2935     RE
0516 0  3134          DC      /3134     AD
0517 0  0035          DC      /0035      E
0518 0  2929          DC      /2929     RR
                      *
                      *       E009 WRONG SECTOR ID READ
                      *
0519 0  000D  MSG03   DC      13        WORD COUNT
051A 0  350A          DC      /350A     E0
051B 0  0A09          DC      /0A09     09
051C 0  0016          DC      /0016      W
051D 0  2926          DC      /2926     RD
051E 0  2537          DC      /2537     NG
051F 0  0012          DC      /0012      S
0520 0  3533          DC      /3533     EC
0521 0  1326          DC      /1326     TD
0522 0  2900          DC      /2900      R
0523 0  3934          DC      /3934     ID
0524 0  0029          DC      /0029      R
0525 0  3531          DC      /3531     EA
0526 0  3400          DC      /3400     D
                      *
                      *       E00A PROG EXCEEDED CORE LIMIT
                      *
0527 0  000F  MSG06   DC      15        WORD COUNT
0528 0  350A          DC      /350A     E0
0529 0  0A31          DC      /0A31     0A
052A 0  0027          DC      /0027      P
052B 0  2926          DC      /2926     RD
052C 0  3700          DC      /3700     G
052D 0  3517          DC      /3517     EX
052E 0  3335          DC      /3335     CE
052F 0  3534          DC      /3534     ED
0530 0  3534          DC      /3534     ED
0531 0  0033          DC      /0033      C
0532 0  2629          DC      /2629     DR
0533 0  3500          DC      /3500     E
0534 0  2339          DC      /2339     LI
0535 0  2439          DC      /2439     MI
0536 0  1300          DC      /1300     T
                      *
                      *       E00B PROG LOAD ERR
                      *
0537 0  0009  MSG07   DC      9         WORD COUNT
0538 0  350A          DC      /350A     E0
0539 0  0A32          DC      /0A32     0B
053A 0  0027          DC      /0027      P
053B 0  2926          DC      /2926     RD
053C 0  3700          DC      /3700     G
053D 0  2326          DC      /2326     LD
053E 0  3134          DC      /3134     AD
053F 0  0035          DC      /0035      E
0540 0  2929          DC      /2929     RR
                      *
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80215650
80215660
80215670
80215680
80215690
80215700
80215710
80215720
80215730
80215740
80215750
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80215780
80215790
80215800
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80215970
80215980
80215990
80216000
80216010
80216020
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80216060
80216070
80216080
80216090
80216100
80216110
80216120
80216130
80216140
80216150
80216160
80216170
80216180
80216190
80216200
80216210
80216220
80216230
80216240
80216250
80216260
80216270
80216280
80216290
80216300
80216310
80216320
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                      *       E00C SELECTED PID NOT ON DISK
                      *
0541 0  000F  MSG08   DC      15        WORD COUNT
0542 0  350A          DC      /350A     E0
0543 0  0A33          DC      /0A33     0C
0544 0  0012          DC      /0012      S
0545 0  3523          DC      /3523     EL
0546 0  3533          DC      /3533     EC
0547 0  1335          DC      /1335     TE
0548 0  3400          DC      /3400     D
0549 0  2739          DC      /2739     PI
054A 0  3400          DC      /3400     D
0548 0  2526          DC      /2526     NO
054C 0  1300          DC      /1300     T
054D 0  2625          DC      /2625     ON
054E 0  0034          DC      /0034      D
054F 0  3912          DC      /3912     1S
0550 0  2200          DC      /2200     K
                      *
                      *       E00D DISK WRT ERR
                      *
0551 0  0009  MSG09   DC      9         WORD COUNT
0552 0  350A          DC      /350A     E0
0553 0  0A31          DC      /0A31     0A
0554 0  0034          DC      /0034      D
0555 0  3912          DC      /3912     1S
0556 0  2200          DC      /2200     K
0557 0  1629          DC      /1629     WR
0558 0  1300          DC      /1300     T
0559 0  3929          DC      /3929     ER
055A 0  2900          DC      /2900      R
                      *
055C    004E          END     START
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80216330
80216340
80216350
80216360
80216370
80216380
80216390
80216400
80216410
80216420
80216430
80216440
80216450
80216460
80216470
80216480
80216490
80216500
80216510
80216520
80216530
80216540
80216550
80216560
80216570
80216580
80216590
80216600
80216610
80216620
80216630
80216640
80216650
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CROSS REFERENCE LISTING

SYMBOL	VALUE	REFERENCES
AC	0174	0136,0138,013D
AQ2	04CC	0498,04C3
BRANC	0173	0183
BRAN1	0180	0186
CDCT	0276	0219,025A
CLR	0164	0167
CMN1	0050	
CMN11	0109	0101
CMN2	0061	0073
CMN3	0083	008C
CMN4	00C8	008D,00F7
CMN5	00D8	
CMN6	00E1	0112
CMN7	00EE	010F
CMN8	00F8	00F4
CMN9	00FA	00FE
CNT	0326	0316,031C
CODCV	0494	046F,04C4
CODC1	049C	0488
CODC2	04AE	04AD
CODC3	04B9	04B3
CODC4	04BD	0495,0496,0497
CODWD	04C6	046E,0470,049C,04BC
CODO0	04C8	04A3,04A4,04A8,04A9
CODO1	04C9	0480,0489
CODO2	04CA	0488
CKLMT	0277	023B,023C
CV12	02B1	0226,02CD
CV12A	02B7	02C6
CV12B	02B8	02C4
CV12C	02BF	02BA
CV12D	02C7	02B2,02B3,02B4
CYLTB	0168	012F,0144,0147,0189,02D3,02D6,032A,0351,0354,0433
CYTBL	0046	0120
DHM	03B4	0168,01FE,0328,0389
DHM1	03B6	03C4
DHM2	03BF	03BC,03C2
DIRS	02D2	01E2,01F7,0316
DIRS1	02D8	02D9
DIRS2	02DE	02D5
DIRS3	02E5	02DA
DIRS4	02EB	031F
DIRS5	02F7	02EF
DIRS6	0309	0310
DIRS7	0318	02F0,02F5
DRD	03D4	0213,02DE,0336,0361,039F,03D9,0407,0409
DRDY	03AA	018C,03AD,03B0,03B3
DRD1	03E7	03EA,03F1,03FD
DRD2	03F6	03EE
DRD3	0401	03D5,03D6,03D7,03FA
DSK	03C6	018E,0210,02D8,02E5,0331,0359,036C,03C7,0300,03D2
DSK1	03CB	03CD
DSN	040C	013E,0140,0341,03C0,03CB,03EB
DSNR	040E	0346,0348,03A8,03B6,03CF,03EC,03ED
ECT	03A5	0374,039A
EDADR	03A7	035E
EDSW	0114	00CE,0195,01B4
EDTS	0327	01F4,0287,0350,03A3
EDTSA	039D	0378
EDTSW	017A	0191,0181,038F,041D
EDTS1	0359	0357
EDTS2	0361	0353,035B,0360,0365
EDTS4	036C	0358
EDTS5	0379	0398
EDTS6	0384	0383,038E
EDTS7	0392	037F
EDTS8	0395	0391,0394
EDTS9	039F	0320,039D
EDT1	0331	0330
EDT2	0336	032C,0334
EDT3	0341	0344
EDT4	0351	034A
EDT5	035E	0369
ERR	041A	03F4,0400
HM	0410	038F
HOME	008C	0052,00C4,00C7,00C8,00DC,00FF,0102
HOME1	00BD	00C0
IMG	0119	00D4,02FE
IO	00A3	0058,0067,0060,007D,0088,00A8,0086,008A,00E9,00F1
IOARA	0488	045D,0471,047A,047C,0492
IOCC	0092	0054,005A,005E,0061,0064,0066,006A,006C,006E,0077, 007C,007F,0085,0089,00AC,00E6,00E8,00ED,00FE,0108, D10D
IO1	00AC	00A8,00AF
IO2	00B8	00A4,00B3
KFFFF	017C	01A9,01C2,0292,02A0
KFF00	042F	042A
KF8	0175	0135,0164
K00FF	0274	022A
K0300	0098	0065,0068
K1	0178	0194,01EC,01F3,0278,0375
K292	00A2	0068,0086
K321	0096	00EF
K4	0278	0218
K6000	0161	015E
K9F	0182	01D8
LHIND	04C7	049A,049E,0482,0485
LOG	0430	01D0,9241,0260,0321,034C,03F2,03FE,0437,044F,0451, 0463,0469
LOG01	0431	
LOG02	043A	0442,0444
LOG05	0445	0440
LOG06	0448	0431,0432,0485
LSTPG	0177	01C1,01C8,01D6,0264,041F,0427
MASK0	009C	0050
MASK1	009E	0051
MECD	0124	00CF
MLCD	0123	00D2
MOD4	0418	
MONSW	0179	01C9,01E1,01E9,01F0
MSG01	04FE	01D2
MSG02	050F	03F3
MSG03	0519	03FF
MSG06	0527	0243
MSG07	0537	0262
MSG08	0541	0323
MSG09	0551	034E
NLOC	0125	01C6,01F9,027F
ORG	0116	00DF,0289,D307
PID	0044	
PIDRQ	0178	018C,01DF,01EF,01F5,02F3,037D
PIDSV	0176	0189,01BE,01F2
PRSN	048C	0446
PRSNS	048A	043A,044A
PRWRT	048E	0439,0445
RD	D414	03DC,03E3,03E6,03E7,03F6
READ	0097	007E,00EA
RLBA	017D	01F8
SECCT	0117	00D8,025D,0302
SEEK1	0098	0053,D078,00E7
SEEK2	0095	0078
SE01	012C	C04E,0132
SE02	0138	0143

SELECT/EXECUTE SECTION (CARD)

SE03	0151	0159
SE03A	0162	0181
SE03B	015A	0157
SE04	0183	00CA,0158,0160,016A
SE04A	018E	0168
SE06	0197	01AC,01B8,02A0
SE07	0190	019C
SE08	01A0	01A5
SE08A	01AD	01B2,01CC,02AF
SE09	01B0	01AA
SE10	01B3	0192,0266
SE11	01C1	01BA,0109
SE11A	01C6	0245,042B
SE12	01CD	01C4,042D
SE13	01D0	0324
SE14	01DF	01DC
SE15	01E2	01F1
SE16	01E9	01DD,01DE
SE17	01EF	01F4
SE18	01F2	01ED,01EE
SE19	01F5	018F,01FB
SE20	0204	0203,0205,026C
SE21	0210	0200
SE22	0213	0207,0268,026A,026E
SF23	021D	021C,0225,025C
SE24	0220	0224
SE25	0238	0230,0248
SE26	0247	023F
SE27	024C	0237
SE28	0250	0257,0259
SE29	0255	0273
SE30	0268	025F
SE31	026F	0253
SE32	028E	028D
SE33	0290	0295
SE34	0299	02AC
SE35	029D	029C
SE36	02A6	02AB
SE37	02AD	02A2
SHIFT	02CF	0288
SIOCK	0113	00E2,00F2,0109
SK	0412	02E3,02EB,036A,036E,03C9,03CA
SKHM	0094	008D
SKST	03C5	0387,038D
SNS	008E	0062,00AD,00BE,010C,0139,0138
SNSR	0090	00A6,00B1,00B2,00C2
SNSW	017E	01D4,0424
START	004E	0045,0558
STCYL	011B	00DD,0201,030C
TEMP	0570	0197,0136,0216,021A,0297,02E1,02EB,02FA,0305,030A, 0312,031D,0372,037A,03F7,0389,03A7,03AB,03A9
TRMSW	0115	0001,01CA,01CE,0421
TWRTR	0453	0435,0458
TWRTO	0486	045C
TWR01	045C	0458
TWR02	046C	0468,0484
TWR03	0480	0479
TWSNS	0490	0455,045F,0473
TWWRT	0492	045E,0472
UL1M	0126	0150,0152,0153,015F,023D
UPPER	0127	01F0,0232,0270,0270,0283,0288
WDCT	0275	022B,0249
WKCY1	00AC	0057,0075,0145
WKCY2	00A1	0374,0148
WRDSW	0487	0454,0477,047D,0481
WRITE	0099	0050
WRT	0416	033F
W340A	0423	340A

SELECT/EXECUTE SECTION (CARD)

W3408	0128	3408,0123
W340C	0129	340C,0124
W3400	034F	
W3400	01D3	3400
W3401	00AA	3401
W3402	00B7	3402
W3403	00C6	3403
W3404	00F6	3404
W3405	03B2	3405
W3406	03BE	3406
W3407	0441	3407,043B
W3408	0443	3408,043E
W3409	045A	3409
XFER	0118	0005,0107,0285,0314
XFRCD	0279	022C
XFRSW	009A	0055,0079,00C9,00C0,01AD,01E6,041B
XIOSN	0473	0476
XIOWR	0472	047F
XRSV	03A6	0398,0399
ZONE	04CE	04A8
ZONEN	04D2	04CE
ZONE1	04DD	04CF
ZONE2	04E8	04D0
ZONE3	04F2	0401

TABLE OF CONTENTS

1. PURPOSE

THE DIMAL SYSTEM IS DESIGNED TO GENERATE A MAINTENANCE LIBRARY OF 1800 DIAGNOSTIC FUNCTION TESTS, AND THEN TO PROVIDE A METHOD FOR BRINGING THESE DIAGNOSTIC TESTS INTO CORE FOR PROGRAM EXECUTION.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

A. DIMAL IS A SELF CONTAINED SYSTEM AND IS LOADED ON THE DISK PACK BY THE DIMAL INITIAL LOADER (PID 887).

B. THE INITIAL LOADER MUST BE EDITED IN ORDER TO WRITE DIMAL ON THE DISK PACK. REFER TO APPENDIX SECTION 6.1 FOR EDIT PROCEDURE.

C. DIMAL USES 4096 WORDS OF CORE DURING INITIAL DISK PACK GENERATION, AND DURING EXISTING DISK PACK MODIFICATION. DURING DFT SELECTION AND EXECUTION, DIMAL RESIDES IN CORE LOCATIONS 80 THROUGH 299 DECIMAL AND SHARES 2066 WORDS OF CORE WITH THE DFT'S, STARTING AT LOCATION 300 DECIMAL.

D. DIMAL IS CALLED FROM THE DISK PACK BY COLD START CALL CARDS (PROVIDED BY DIMAL), OR BY A CALL ROUTINE ENTERED VIA THE DATA ENTRY SWITCHES. REFER TO APPENDIX SECTION 6.2 FOR THE DATA ENTRY SWITCH CALL ROUTINES.

2.2 EQUIPMENT REQUIREMENTS

A. 1801 OR 1802 PROCESS CONTROLLER

B. 4K CORE STORAGE

C. 1442 CARD READER/PUNCH

D. 1053/1816 PRINTER OR 1443 PRINTER

E. 2310 DISK DRIVE **NOTE** MODEL C CANNOT BE USED

F. 2315 C.E. DISK PACK

3. USE PROCEDURE

3.1 INITIAL DISK PACK GENERATION (LOADER/ORG. SECTION)

THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED TO LOAD DIMAL AND THE DIAGNOSTIC FUNCTION TESTS ON THE C.E. DISK PACK.

1. LOAD AND EXECUTE PROGRAM PID 8D8 (2315 DISK INITIALIZATION PROGRAM) TO ENSURE THAT THE DISK SECTORS ARE PROPERLY ADDRESSED, AND THAT ANY BAD CYLINDERS ARE DEFINED.

   REFER TO DIAGNOSTIC MONITOR AND 2315 PROGRAM DOCUMENTATION FOR OPERATING PROCEDURES.

2. LOAD AND EXECUTE PROGRAM PID 8D9 (2310 DISK FUNCTION TEST) TO INSURE THAT THE DISK DRIVE IS OPERATING CORRECTLY. REFER TO DIAGNOSTIC MONITOR AND 2310 PROGRAM DOCUMENTATION FOR OPERATING PROCEDURES.

3. CLEAR CORE STORAGE TO ZERU

   A. SET OATA ENTRY SWITCHES TO 0000
   8. SET CHECK STOP SWITCH TU OFF
   C. SET WRITE STORAGE PROTECT SWITCH TO YES.
   D. OEPRESS AND HOLD THE CLEAR STORAGE 8UTTON, THEN PRESS START 8UTTON. CPU SHOULD NOW BE CLEARING STORAGE.
   E. PRESS STUP THEN RESET BUTTONS TO TERMINATE CLEAR STORAGE OPERATION.

4. SET CHECK STOP SWITCH TO UN.
   SET WRITE STORAGE PROTECT SWITCH TO NO.

5. SET ALL SENSE/PROGRAM SWITCHES TO OFF.

6. SWITCH SETTINGS INDICATED IN STEP 5 A8OVE SHOULD REMAIN AS INDICATED FOR THE DORATIUN OF THE DISK PACK GENERATION.

7. O8TAIN PROGRAM OECK 8B7, DIMAL INITIAL LOADER.

   OPERATION AND USE UF THE INITIAL LOADER IS DESCRI8ED IN THIS DOCUMENT. THERE IS NO SEPARATE DOCUMENTATION FOR THE INITIAL LOADER.

8. PUNCH TWO (2) EDIT CAROS ACCORDING TO APPENDIX SECTION 6.1 EOIT PROCEDURE, AND PLACE THESE EDIT CARDS 8EHIND THE DIMAL INITIAL LOADER DECK.

   * NOTE *
   REFER TO FIGURE 1, APPENDIX SECTION 6.4 FOR A PICTORIAL REPRESENTATION OF THE O8JECT DECK MAKEUP DESCRIBED 8ELOW.

9. O8TAIN PROGRAM DECK 0802 DIMAL SYSTEM AND PLACE THIS DECK BEHIND THE EDIT CAROS OESCRI8ED IN STEP 8.

10. AT THE 1442 CARD READ PONCH

    A. INSURE THAT THE HUPPER IS EMPTY
    8. OEPRESS THE NPRU PUSH BUTTON TO INSURE THE 1442 IS CLEAR OF CARDS.
    C. PLACE THE CARD DECK, OBTAINED BY PERFORMING STEPS 7, 8, AND 9 ABOVE, IN THE 1442 HUPPER.
    D. OEPRESS THE 1442 START BUTTON. THE 1442 SHOULD FEED 1 CARO AND BECOME READY.

11. O8TAIN THE PROGRAM OECKS FOR THE OIAGNOSTIC FONCTION TESTS TO BE LOADED ON THE DISK.

    A. THE FOLLOWING PROGRAMS SHOULD NOT BE LOADED ON THE OISK.

       1. PID 0800 DIAGNOSTIC MONITOR HEAOER PROGRAM. (OIMAL CONTAINS ITS OWN HEADER).
       2. PID 08B0 RELOCATABLE DIAGNOSTIC LOADER
       3. PID 088C 8ASIC OIAGNOSTIC LOADER (DIMAL CONTAINS ITS OWN LOADERS)
       4. ALL AUX PROGRAMS WITH THE EXCEPTION OF PIDS 0BAC AND 08AD AUX PROGRAM GENERATUR OTILITY PROGRAMS.
       5. PIDS 08C2, 0BC3, 08C4 AND 08C5 EDIT OTILITY PROGRAMS.
       6. PID 08C8 SCOPE LOOPS
       7. PID 08C9 CE UTILITY PROGRAMS
       8. PID 080C MONITOR ENGLISH MESSAGE DECK

12. IF PIO 08AC IS TO BE LOADED ON THE DISK, PERFORM THE FOLLOWING

    1. REMOVE THE 1ST 16 CARDS OF THIS DECK, DO NOT INCLUDE THE BLANK CARD FOLLOWING THE 16TH CARD.
    2. THE 16 CAROS REMOVED CONSTITUTE THE PROGRAM DECK TO BE LOADED ON THE DISK.

13. PLACE THE OFT PROGRAM DECKS IN THE 1442 HOPPER 8EHIND THE DIMAL DECK. INSURE THAT THE EDIT CARDS FOLLOW THE PROGRAM FOR WHICH THEY ARE INTENOED, AND THAT THEY ARE IN CORRECT SEQUENCE. DO NOT LOAD PROGRAMS WHICH ARE TEMPORARILY CORRECTED WITH PATCH CARDS. PATCH CAROS CANNOT BE LOADEO ON THE OISK.

14. THE OFT PROGRAM DECKS MAY BE LOADEO IN ANY ORDER. 12-4 DECKS AND 8-8 OECKS MAY BE INTERMIXED. OO NOT PLACE BLANK CAROS AT THE END OF THE DECKS. IT IS HOWEVER, SUGGESTEO THAT THE DECK SEQUENCE 8E AS FOLLOWS, TO MINIMIZE OISK SEEK TIME DURING PROGRAM SELECTION.

    A. PID 0801 OIAGNOSTIC MONITOR
    B. ALL OIAGNOSTIC MONITOR PROGRAMS IN PIO SEQUENCE
    C. ALL NON MONITOR PROGRAMS IN PID SEQUENCE.
    D. OTILITY PROGRAMS

15. AT THE 1800 CPU, PRESS THE RESET BUTTON, THEN PRESS PROGRAM LOAD. THE INITIAL LOADER SHOULD START READING IN.

16. THE INITIAL LOADER WILL WRITE OIMAL ON DISK THEN 8RING DIMAL INTO THE PROPER CORE OPERATING AREA. DIMAL WILL THEN TAKE CONTROL AND INPUT THE OFTS.

17. COMMONICATION OF ERRORS AND OPERATOR ACTIONS IS VIA PRINTOUTS AND PROGRAM WAITS. REFER TO SECTION 4.0 PRINTOOTS, AND SECTION 3.4 PROGRAM HALTS TO OETERMINE WHAT ACTION MOST BE TAKEN FOLLOWING A PRINTOOT OR PROGRAM WAIT.

18. OFT'S WILL CONTINOE TO LOAO UNTIL THE 1442 HOPPER BECOMES EMPTY. OIMAL WILL COME TO WAIT 305, B REG = 3305.

19. AT THE 1442 PRESS THE START BUTTON. THE 1442 SHOOLD GO READY FOR THE LAST CARD.

20. AT THE 1800 C.P.O. PRESS THE START 8UTTON. THE LAST CARD SHOULD READ IN.

21. DIMAL THEN PRINTS MESSAGE C001 REQOESTING THE OPERATOR TO INDICATE IF LOADING IS COMPLETE.

    A. IF IT IS DESIRED TO LOAD MORE OFT'S READY THE 1442 WITH THE OFT DECKS AND PRESS THE 1800 C.P.O. START BOTTON. OFT LOAOING WILL CONTINOE AS 8EFORE.

22. IF OFT LOADING IS CUMPLETEO, SET DATA ENTRY SWITCHES TO FFOO AND PRESS START 8UTTON.

23. DIMAL WILL COMPLETE THE GENERATION FUNCTION AND THEN LIST ALL PROGRAMS ON THE DISK ALONG WITH THEIR LOCATION, AND ALL EDIT INFORMATION NOW CONTAINED ON THE DISK.

24. DIMAL THEN PRINTS MESSAGE C005. READY THE 1442 WITH AT LEAST 8 8LANK CARDS.

25. DIMAL THEN PUNCHES 6 COLO START CALL CARDS. SAVE THESE CARDS. THEY ARE USED TO INPUT OIMAL ONCE THE LIBRARY HAS BEEN GENERATED.

26. MESSAGE 0003 IS THEN PRINTED. THIS MESSAGE INDICATES A SEEK COUNT WHICH IS REQUIRED BY THE BIT SWITCH ENTERED COLD START CALL ROUTINE. IT IS SUGGESTED THAT THIS PRINTOUT BE TAPED TO THE C.E. DISK PACK TO AVOID LOSS.

27. PROGRAM THEN COMES TO WAIT 300, B REG = 3300, WHICH INDICATES THAT DISK PACK GENERATION HAS BEEN COMPLETED, AND MAY NOW BE USED FOR PROGRAM SELECTION AND EXECUTION.

** IMPORTANT NOTE **

RUNNING OF THE 2315 DISK INITIALIZATION PROGRAM ON THE MAINTENANCE LIBRARY PACK WILL CAUSE THE LIBRARY TO BE DESTROYED.

3.2 EXISTING DIMAL DISK PACK MODIFICATION (LOADER/ORG SEC)

1. GENERAL OPERATING INSTRUCTIONS

A. PLACE THE C.E. DISK PACK CONTAINING THE MAINTENANCE LIBRARY ON THE DESIRED DISK DRIVE AND MAKE THE DRIVE READY.

IF THE C.E. LIBRARY PACK IS ALREADY MOUNTED, INSURE THAT THE ACCESS ARM IS IN ITS HOME POSITION.

THE ACCESS ARM MAY BE RETURNED TO HOME BY PERFORMING THE FOLLOWING -

1. PRESS CONSOLE RESET BUTTON.
2. SET MODE SWITCH TO LOAD POSITION.
3. ENTER FOLLOWING PROGRAM IN THE DATA ENTRY SWITCHES PRESSING START AFTER EACH ENTRY.

DRIVE A1	DRIVE A2	DRIVE A3
0801	0801	0801
3000	3000	3000
00CA	00CA	00CA
2404	4404	4C04

4. SET MODE SWITCH TO RUN
5. PRESS RESET AND START. ARM WILL BE RETURNED TO HOME AND THE SYSTEM WILL STOP WITH I REG. = 2
6. PRESS RESET BUTTON AND PROCEED TO NEXT STEP.

B. AT THE 1800 C.P.U., CLEAR CORE STORAGE AS DESCRIBED IN SECTION 3.1.3.

C. SET CHECK STOP SWITCH TO ON.

D. SET WRITE STORAGE PROTECT SWITCH TO NO.

E. SET ALL DATA ENTRY SWITCHES, SENSE/PROGRAM SWITCHES AND C.E. SWITCHES TO THE OFF POSITION.

F. OBTAIN THE COLD START CALL CARDS PROVIDED BY DIMAL DURING INITIAL DISK LIBRARY GENERATION.

IF IT IS DESIRED TO CALL DIMAL VIA DATA ENTRY SWITCH CALL ROUTINE, REFER TO APPENDIX SECTION 6.2.

G. REFER TO COLUMNS 41 THROUGH 80 ON THE CALL CARDS FOR THE CARD IDENTIFICATION.

H. SELECT 1 OF THE FOLLOWING 3 CALL CARDS ACCORDING TO THE DISK DRIVE BEING USED.

1. A1L FOR DISK DRIVE A1
2. A2L FOR DISK DRIVE A2
3. A3L FOR DISK DRIVE A3

THE 1ST AND 2ND DIGITS OF THE ID INDICATE THE DISK DRIVE. THE 3RD DIGIT (L) INDICATES THAT THIS CARD WILL CALL THE LOADER/ ORGANIZOR SECTION OF THE DIMAL SYSTEM.

I. AT THE 1442 CARD READ PUNCH

1. CLEAR THE 1442 OF ALL CARDS.
2. PLACE THE CALL CARD IN THE HOPPER.
3. PRESS THE START BUTTON. THE CARD SHOULD FEED IN.
4. PRESS THE START BUTTON TO MAKE THE 1442 READY

J. AT THE 1800 C.P.U.

1. PRESS THE RESET BUTTON
2. PRESS THE PROGRAM LOAD BUTTON. THE CALL CARD SHOULD READ IN.

K. THE COLD START CALL WILL 1ST LOAD THE DIMAL HEADER TESTS. IF THE HEADER TESTS RUN SUCCESSFULLY(RUN TIME APPROXIMATELY 1 SEC), THE COLD START LOADER WILL BE BROUGHT INTO CORE AND IT IN TURN WILL LOAD THE DIMAL LOADER/ORGANIZOR SECTION.

IF AN ERROR IS DETECTED BY THE HEADER TEST (INDICATED BY WAITS 4 THROUGH 126) , REFER TO SECTION 3.6 FOR ERROR PROCEDURE.

L. THE LOADER/ORGANIZOR THEN PRINTS MESSAGE C004 SELECT OPTIONS.

TABLE 1 SUMMERIZES THE OPTIONS AVAILABLE WITH THE LOADER/ ORGANIZOR SECTION.

PROCEED TO THE APPROPRIATE SECTION AS CALLED OUT IN THE TABLE OF CONTENTS, FOR OPERATING PROCEDURES OF THE OPTION DESIRED.

TABLE 1
LOADER/ORGANIZOR OPTION SWITCHES

SENSE/PROGRAM 0 1 2 3 4 5 6 7	DESCRIPTION
. 1	LIST THE COLD START SEEK COUNT REQUIRED BY THE DATA ENTRY SWITCH CALL ROUTINES.
. . . . . 1 .	PUNCH COLD START CALL CARDS.
. . . . 1 . .	LIST CONTENTS OF EDIT TABLE.
. . . 1 . . .	LIST CONTENTS OF LOCATION DIRECTORY.
. . 1	CHANGE EDIT.
. 1	DELETE PROGRAM.
1	ADD PROGRAM.

ONLY 1 OPTION AT A TIME MAY BE PERFORMED. OPTION PRIORITY IS FROM SWITCH 0 TO SWITCH 7.

2. ADD PROGRAM TO DIMAL PACK

A. PERFORM THE GENERAL OPERATING PROCEDURES SECTION 3.2.1 IF DIMAL IS NOT IN CORE.

B. READY THE 1442 CRP WITH THE PROGRAM OR PROGRAMS TO BE ADDED. INSURE THE EDIT CARDS IF REQUIRED, FOLLOW THE APPROPRIATE PROGRAM DECK.

C. AT THE C.P.U. SET SENSE/PROGRAM SWITCH 0, CLEAR ALL OTHERS, AND PRESS START PUSHBUTTON. PROGRAMS SHOULD READ IN TILL 1442 HOPPER BECOMES EMPTY -(INDICATED BY WAIT 305, (B REG = 3305).

O. PRESS THE 1442 START BUTTON TO READY IT FOR THE LAST CARD.

E. PRESS THE 1800 C.P.U. START BUTTON, LAST CARD SHOULD READ IN

F. MESSAGE C002 IS THEN PRINTED, SET DATA ENTRY SWITCHES TO FF00 AND PRESS START BUTTON.

G. A NEW LISTING OF THE DISK LOCATION DIRECTORY AND EDIT TABLE WILL BE PROVIDED.

H. MESSAGE C004 IS THEN PRINTED AND THE PROGRAM STOPS AT WAIT 300 B REG = 3300 INDICATING THE OPERATION HAS BEEN COMPLETED.

3. DELETE PROGRAM FROM DIMAL PACK

A. PERFORM THE GENERAL OPERATING PROCEDURES, SECTION 3.2.1, IF DIMAL IS NOT IN CORE.

B. SET SENSE/PROGRAM SWITCH 1, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. DIMAL PRINTS MESSAGE C002 AND STOPS AT WAIT 309, B REG = 3309.

O. ENTER THE PID OF THE PROGRAM TO DELETE IN DATA ENTRY SWITCHES B THROUGH 15 AND PRESS START BUTTON.

E. DIMAL WILL DELETE THE PROGRAM SPECIFIED AND ALL EDIT INFORMATION ASSUCIATED WITH IT. IF A PROGRAM HAD BEEN LOADED ON THE DISK MORE THAN ONCE, THEN ALL SUCH PROGRAMS BEARING THE SPECIFIED PID WILL BE DELETED.

F. OPERATION COMPLETED IS INDICATED BY MESSAGE C004 AND WAIT 300 (B REG = 3300).

4. CHANGE EDIT ON DIMAL PACK

A. PERFORM THE GENERAL OPERATING PROCEDURES, SECTION 3.2.1, IF DIMAL IS NOT IN CORE.

B. SET SENSE/PROGRAM SWITCH 2, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. DIMAL WILL PRINT MESSAGE C003 AND STOP AT WAIT 30A, B REG = 330A.

D. OBTAIN A COMPLETE SET OF EDIT CARDS FOR THE PROGRAM TO WHICH THE CHANGE IS TO BE MADE.

E. PUNCH NEW EDIT CARDS WITH THE DESIRED CHANGES AND INSERT THEM IN THE EDIT DECK IN PLACE OF THE OLD CARDS. INSURE THAT THE EDIT CARDS ARE IN CORRECT SEQUENCE.

F. PLACE THE NEW SET OF EDIT CARDS IN THE 1442 HOPPER AND MAKE IT READY.

MORE THAN 1 SET OF EDIT CARDS MAY BE ENTERED (PROVIDING THEY ARE NOT FOR THE SAME PROGRAM) BY STACKING THE EDIT DECK IN THE 1442 HOPPER.

EDIT CARDS FOR PROGRAMS LOADED ON THE DISK BUT NOT PREVIOUSLY EDITED WILL ALSO BE ACCEPTED. THESE EDIT DECKS MAY BE STACKED WITH THOSE BEING CHANGED.

G. AT THE 1800 C.P.U. PRESS THE START BUTTON.

H. EDIT CARDS WILL READ IN UNTIL THE 1442 HOPPER BECOMES EMPTY. DIMAL WILL STOP AT WAIT 305, B REG = 3305.

I. DEPRESS THE 1442 START BUTTON TO READY IT FOR THE LAST CARD.

J. DEPRESS THE 1800 C.P.U. START BUTTON.

K. THE NEW CONTENTS OF THE EDIT TABLE WILL NOW BE LISTED.

L. OPERATION COMPLETED IS INDICATED BY MESSAGE C004 AND WAIT 300. (B REG = 3300).

5. LIST CONTENTS OF DIMAL LOCATION DIRECTORY

A. PERFORM THE GENERAL OPERATING PROCEDURES, SECTION 3.2.1, IF DIMAL IS NOT IN CORE.

B. SET SENSE/PROGRAM SWITCH 3, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. DIMAL WILL LIST THE LOCATION DIRECTORY, MESSAGE 0001.

D. OPERATION COMPLETE IS INDICATED BY MESSAGE C004 AND WAIT 300. B REG = 3300).

6. LIST CONTENTS OF DIMAL EDIT TABLE

A. PERFORM THE GENERAL OPERATING PROCEDURES SECTION 3.2.1 IF DIMAL IS NOT IN CORE.

B. SET SENSE/PROGRAM SWITCH 4, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. DIMAL WILL LIST THE EDIT TABLE, MESSAGE 0002.

D. OPERATION COMPLETE IS INDICATED BY MESSAGE C004 AND WAIT 300. (B REG = 3300).

7. PUNCH COLD START CALL CARDS.

A. PERFORM THE GENERAL OPERATING PROCEDURES, SECTION 3.2.1, IF DIMAL IS NOT IN CORE.

B. SET SENSE/PROGRAM SWITCH 5, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. MESSAGE C002 WILL BE PRINTED AND THE PROGRAM WAITS AT WAIT 308. (B REG = 3308).

D. READY THE 1442 WITH AT LEAST 8 BLANK CARDS.

E. AT THE 1800 C.P.U., PRESS THE START BUTTON. DIMAL SHOULD START PUNCHING THE CALL CARDS.

F. OPERATION COMPLETE IS INDICATED BY MESSAGE C004 AND WAIT 300 (B REG - 3300).

G. AT THE 1442 CARD READ PUNCH.

1. REMOVE ANY BLANK CAROS FRUM THE HOPPER.

2. PRESS THE NPRU BUTTUN TO CLEAR THE 1442.

3. REMOVE AND SAVE THE 6 PUNCHED CALL CARDS.

B. LIST COLD START CALL SEEK COUNT.

A. PERFORM THE GENERAL OPERATING PROCEOURES, SECTION 3.2.1, IF DIMAL IS NOT IN CURE.

B. SET SENSE/PROGRAM SWITCH 6, CLEAR ALL OTHERS, AND PRESS THE START BUTTON.

C. MESSAGE D003 WILL BE PRINTED. SAVE THE MESSAGE FUR FUTURE USE.

D. OPERATION COMPLETE IS INDICATED BY MESSAGE C004 AND WAIT 300 (B REG = 3300).

3.3 DIAGNUSTIC PROGRAM SELECTION AND EXECUTION (SELECT/EXECUTE SECTION)

1. GENERAL UPERATING INSTRUCTIONS

A. PLACE THE C.E. DISK PACK CONTAINING THE MAINTENANCE LIBRARY ON THE DESIRED DISK DRIVE AND MAKE THE DRIVE READY.

IF THE C.E. LIBRARY PACK IS ALREADY MOUNTEO, INSURE THAT THE ACCESS ARM IS IN ITS HOME PUSITION.

THE ACCESS ARM MAY BE RETURNEO TO HOME BY PERFORMING THE FULLUWING,

1. PRESS CONSOLE RESET BUTTON.
2. SET MODE SWITCH TU LOAD PUSITION.
3. ENTER FOLLUWING PROGRAM IN THE DATA ENTRY SWITCHES, PRESSING START AFTER EACH ENTRY.

DRIVE A1	DRIVE A2.	DRIVE A3
0801	0801	0801
3000	3000	3000
00CA	00CA	00CA
2404	4404	4C04

4. SET MODE SWITCH TO RUN.
5. PRESS RESET AND START. ARM WILL BE RETURNED TO HOME AND MACHINE WILL STOP WITH I REG. = 2.
6. PRESS RESET BUTTON AND PROCEED TO NEXT STEP.

B. AT THE 1800 C.P.U., CLEAR CORE STORAGE AS DESCRIBED IN SECTION 3.1.3.

C. SET CHECK STOP SWITCH TO ON.

D. SET WRITE STORAGE PROTECT SWITCH TO NO.

E. SET ALL OATA ENTRY SWITCHES, SENSE/PROGRAM SWITCHES AND C.E. SWITCHES TU THE OFF POSITION.

F. OBTAIN THE CULD START CALL CAROS PROVIDED BY DIMAL DURING INITIAL OISK LIBRARY GENERATIUN. IF IT IS DESIRED TO CALL OIMAL VIA DATA ENTRY SWITCH CALL ROUTINES, REFER TO APPENDIX SECTIUN 6.2.

G. REFER TO COLUMNS 41 THRUUGH 80 UN THE CALL CARDS FOR THE CARD IOENTIFICATION.

H. SELECT 1 OF THE FULLUWING CALL CARDS ACCORDING TO THE DISK DRIVE BEING USED.

1. A1S FUR DISK DRIVE A1.
2. A2S FOR DISK DRIVE A2.
3. A3S FOR OISK DRIVE A3.

THE 1ST AND 2ND DIGITS OF THE ID INDICATE THE DISK DRIVE. THE 3RD OIGIT (S) INDICATES THAT THIS TAPE WILL CALL THE SELECT/EXECUTE SECTIUN UF THE DIMAL SYSTEM.

I. AT THE 1442 CARD READ PUNCH.

1. CLEAR THE 1442 OF ALL CARDS.
2. PLACE THE CALL CARD IN THE HOPPER.
3. PRESS THE START BUTTUN. THE CARD SHUULD FEED IN.
4. PRESS THE START BUTTUN TO MAKE THE 1442 READY.

J. AT THE 1800 C.P.U.

1. PRESS THE RESET BUTTUN
2. PRESS THE PRUGRAM LOAD BUTTON. THE CARD SHOULD READ IN.

K. THE COLD START CALL WILL 1ST LOAD THE OIMAL HEADER TESTS. IF THE HEADER TESTS RUN SUCCESFULLY (RUN TIME APPROXIMATELY 1 SEC) THE COLD START LOADER WILL BE BROUGHT INTO CORE AND IT IN TURN WILL LUAD THE DIMAL SELECT/EXECUTE SECTION.

IF AN ERROR IS DETECTED BY THE HEADER TEST (INDICATED BY WAITS 4 THROUGH 126) REFER TO SECTION 3.6 FOR ERROR PROCEDURE.

L. SUCCESSFUL LOADING OF THE SELECT/EXECUTE SECTION IS INDICATED BY MESSAGE C006.

REFER TO SECTIONS 3.3.2 OIAGNOSTIC MONITOR PRUGRAMS SELECTION OR 3.3.3 NON MUNITUR PRUGRAMS SELECTION FOR THE REMAINDER UF THE OPERATING PRUCEDURES.

2. DIAGNOSTIC MONITOR PROGRAMS SELECTION

A. PERFORM THE GENERAL OPERATING INSTRUCTIONS AS DESCRIBED IN SECTION 3.3.1.

B. MESSAGE C006 (SELECT PID IN DATA SWS 00XX) IS PRINTED UPUN SUCCESSFUL LOADING OF THE DIMAL SELECT/EXECUTE SECTION.

C. SET THE PID OF THE DESIRED PRUGRAM IN DATA SWITCHES 8 THROUGH 15 AND DEPRESS THE START BUTTON. DIMAL WILL AUTOMATICALLY INPUT THE OIAGNOSTIC MONITOR ON THE 1ST PROGRAM SELECTION.

D. THE DIAGNOSTIC MONITOR WILL BE INITIALIZED, EDITED, PRINT MESSAGE C002 AND STOP AT WAIT 2 (B REG=3002).

E. SELECT MONITOR PROGRAM LOAD OPTIONS.

REFER TO THE EXPLANATION OF MESSAGE C001 IN THE OIAGNUSTIC MONITOR (PIO 0801) OOCUMENTATION FOR THE SWITCH SETTINGS.

F. OEPRESS CONSOLE STARI. THE PROGRAM SELECTEO IN STEP C WILL BE LOAOEO.

G. IF OVERLAP OPERATION HAS BEEN SPECIFIEO, PROCEEO TO STEP K.

BOOTSTRAP MOOE (SELECTED BY BIT SWITCH B = 1 AT OIAGNOSTIC MONITOR WAIT 2) ALLOWS ONLY 1 PROGRAM TO OPERATE IN CORE. WHEN THE OESIRED PROGRAM HAS BEEN LOAOED, THE OIAGNOSTIC MONITOR WILL PRINT MESSAGE 0001.

H. EXECUTE THE SELECTEO PROGRAM. REFER TO OIAGNOSTIC MONITOR DOCUMENTATION, ANO THE OOCUMENTATION FOR THE SELECTEO FUNCTION TEST FOR THE AVAILABLE UPTIONS ANO OPERATING PROCEDURES.

I. UPON COMPLETION OF THE SELECTEO PROGRAM RUN, THE OIAGNUSTIC MUNITOR WILL RETURN TO OIMAL. OIMAL WILL PRINT MESSAGE C006 ANO STOP AT WAIT 400, B REG = 3400. THE NEXT PROGRAM MAY NOW BE SELECTEO.

J. TO RETURN TO OIMAL DURING THE OPERATION OF OIAGNOSTIC PROGRAM, PRESS THE STOP AND RESET BUTTONS. SET THE I COUNTER TO 0050 HEX AND PRESS START, OIMAL WILL LOAD, PRINT MESSAGE C006 ANO STOP AT WAIT 400.

K. OVERLAP MOOE (SELECTEO BY BIT SWITCH B = 0 AT OIAGNOSTIC MONITOR WAIT 2 ALLOWS MORE THAN 1 PROGRAM TO BE LOAOEO ANO EXECUTEO.

L. AFTER EACH PROGRAM HAS BEEN LOAOEO, THE DIAGNOSTIC MONITOR WILL PRINT MESSAGE 0001 ANO RETURN TO DIMAL. DIMAL PRINTS MESSAGE C006 AND STOP AT WAIT 400 FOR THE NEXT PROGRAM SELECTION.

M. THE LAST PROGRAM TU BE LOAOEO IS COMMUNICATEO TO OIMAL BY SETTING OATA SWITCHES 0 THROUGH 7 ALL ON AND SETTING THE PIO OF THE DESIREO PROGRAM IN OATA SWITCHES 8 THROUGH 15. PROGRAM LOAO CUMPLETEO CAN ALSO BE INOICATED BY SETTING THE O.E. SWITCHES TO FF00 AT WAIT 400.

N. WHEN THE FINAL PRUGRAM HAS BEEN LOAOEO, CONTROL IS GIVEN TO THE DIAGNOSTIC MONITOR.

O. EXECUTE THE SELECTEO PRUGRAMS. REFER TO DIAGNOSTIC MONITOR OOCUMENTATION AND THE OUCUMENTATION FOR THE SELECTED PROGRAMS FOR AVAILABLE OPTIONS ANO OPERATING PROCEDURES.

P. TO LOAD A NEW SET OF DIAGNOSTIC TESTS, DE-EXECUTE ANY O.T. WHICH MAY BE RUNNING. PRESS THE STOP AND RESET BUTTONS. SET THE I COUNTER TO 0050 HEX AND PRESS START. DIMAL WILL LOAD, PRINT MESSAGE C006 AND STOP AT WAIT 400. PROGRAMS MAY NOW BE SELECTEO.

3. NON MONITOR PROGRAMS SELECTION

A. PERFORM THE GENERAL OPERATING INSTRUCTIONS AS DESCRIBED IN SECTION 3.3.1.

B. MESSAGE C006 SELECT PIO IN OATA SWS 00XX IS PRINTED UPON SUCCESSFUL LOADING OF THE OIMAL SELECT/EXECUTE SECTION.

C. SET THE PID OF THE DESIREO PROGRAM IN DATA SWITCHES 8 THROUGH 15 AND PRESS START.

D. OIMAL WILL LOAO THE SPECIFIEO PROGRAM ANO GIVE CONTRUL TO IT.

E. REFER TO THE OOCUMENTATION FOR THE SELECT PROGRAM FOR AVAILABLE OPTIONS ANO PROGRAM EXECUTION.

F. IF A NON MONITOR PRUGRAM RETURNS TO THE LOADER UPON COMPLETION, THEN DIMAL WILL BE RELUAOED, PRINT MESSAGE C006 AND STUP AT WAIT 400. THE NEXT PROGRAM MAY NOW BE SELECTEO.

G. IF A NON MONITOR PRUGRAM TERMINATES WITHIN THE PRUGRAM ITSELF, THEN DIMAL MAY BE RECALLEO BY PRESSING THE RESET BUTTON, SETTING THE I COUNTER TO 0050 HEX ANO PRESSING START. OIMAL WILL BE RELOAOEO, PRINT MESSAGE C006 AND STOP AT WAIT 400. THE NEXT PROGRAM MAY NOW BE SELECTEO.

3.4 PROGRAM HALTS (IN LISTING)

AN INTERNAL ERROR (OP CUOE VIULATE, PARITY ERROR, STORAGE PROTECT VIOLATE OR C.A.R CHECK) CONSTITUTES A CATASTROPHIC FAILURE ANO REQUIRES RELUADING OF THE PROGRAM.

PROGRAM WAITS ARE USED IN THIS PROGRAM AND ARE IOENTIFIEO BY REFERENCING THE B REG ANO I REG.

A PROGRAM WAIT IS OF THE FORM,

3XYY, (B REG).

WHERE XYY REPRESENTS THE WAIT NUMBER. IN THE OIMAL SYSTEM, THE WAIT NUMBERS ARE ASSIGNEO IN BLOCKS TO VARIOUS SECTIONS OF THE PROGRAM AS FOLLOWS.

X = 0 OR 1, THE WAIT IS IN THE HEAOER TESTS.
X = 2, THE WAIT IS IN THE COLD START LOAOER.
X = 3, THE WAIT IS IN THE LOAOER/ORGANIZOR SECTION.
X = 4, THE WAIT IS IN THE SELECT/EXECUTE SECTION.
X = 5, THE WAIT IS IN THE INITIAL LOAOER.

A OESCRIPTION OF THE INOIVIOUAL PROGRAM WAIT CAN BE FOUNO AT THE BEGINNING OF THE APPRUPRIATE PROGRAM LISTING. THE FORMAT OF THE WAIT OESCRIPTION FOLLOWS

```
*********************************************************************************
3001 0  01ED              OC      WAIT1+1    WAIT 1
                  *
                  *               OESCRIPTION OF WAIT
                  *
*********************************************************************************
```

B REG, (FIRST 4 OIGIT GROUP) CORRESPONOS TO B REG READING.

I REG, (SECOND 4 DIGIT GROUP) CORRESPONDS TO I REG READING.

3.5 RESTART PROCEOURE

1. INITIAL LOAOER

THERE IS NO RESTART PROCEDURE DURING THE IPL OPERATION. RESTART IS AVAILABLE ONCE THE INITIAL LOAOER IS IN CORE. THE DIMAL PROGRAM DECK MUST BE RELOADEO IN THE 1442 HOPPER ANO THE 1442 MAOE READY. PRESS STOP, RESET ANO START BUTTONS. OIMAL SHOULO BEGIN READING IN.

2. COLD START LOADER

DEPRESS STOP, RESET AND START BUTTONS. THE COLD START LOADER WILL ATTEMPT A RELOAD OF THE SPECIFIED DIMAL SECTION.

3. DIMAL LOADER/ORGANIZUR SECTION

A. INITIAL DISK PACK GENERATION

IF A PROGRAM WAS BEING READ IN VIA THE 1442 AT THE TIME THIS RESTART PROCEDURE IS INITIATED, THEN THAT PROGRAM MUST BE RELOADED. PRESS STOP, RESET AND START BUTTONS. THE NORMAL DISK LOADING OPERATIONS SHOULD CONTINUE.

B. DISK PACK MODIFICATION

PRESS STOP, RESET AND START BUTTONS. MESSAGE C004 SHOULD BE PRINTED AND THE PROGRAM SHOULD STOP AT WAIT 300, B REG = 3300. OPTIONS MAY NOW BE SELECTED.

4. DIMAL SELECT/EXECUTE SECTION

PRESS STOP, RESET AND START BUTTONS. MESSAGE C006 SHOULD BE PRINTED AND THE PROGRAM SHOULD STOP AT WAIT 400, B REG. = 3400. PROGRAMS MUST BE RESELECTED FOR EXECUTION. RESTART MAY ALSO BE ACCOMPLISHED BY PRESSING STOP, RESET, SETTING THE I COUNTER TO 0050 HEX AND THEN PRESS START.

5. DIMAL HEADER SECTION

TO RESTART THE HEADER FROM TEST 1, RE-ENTER THE COLD START CALL CARD. REFER TO SECTION 3.2.1 OR 3.3.1.

IF THE RESTART PROCEDURES FAIL TO PROVIDE THE DESCRIBED RESULTS, RELOADING WILL BE NECESSARY.

3.6 DIMAL HEADER TEST ERROR PROCEDURE

THE HEADER TEST IS DIVIDED INTO 7 TEST SECTIONS (TESTS 0 THROUGH 6). EACH TEST SECTION HAS ITS OWN PROGRAM LISTING. REFER TO THE APPROPRIATE PROGRAM LISTING, WHEN AN ERROR WAIT OCCURS, ACCORDING TO THE FOLLOWING SCHEDULE.

1. WAITS 3004 THROUGH 3063 - HEADER SECTION 1
2. WAITS 3064 THROUGH 3085 - HEADER SECTION 2.
3. WAITS 3086 THROUGH 30A6 - HEADER SECTION 3.
4. WAITS 30A7 THROUGH 30C8 - HEADER SECTION 4.
5. WAITS 30C9 THROUGH 30E8 - HEADER SECTION 5.
6. WAITS 30E9 THROUGH 3108 - HEADER SECTION 6.
7. WAITS 310C THROUGH 3126 - HEADER SECTION 7.

ALL ERRORS SHOULD BE CORRECTED BEFORE CONTINUING.

THE ERRORS ARE DIVIDED INTO 2 GROUPS. GROUP 1 FOR ERRORS 3004 THROUGH 306D, AND GROUP 2 FOR ERRORS 306E THROUGH 3126. AN ERROR PROCEDURE FOR EACH OF THESE GROUPS FOLLOWS.

GROUP 1

THE ERRORS IN GROUP 1 ARE THOSE WHICH OCCUR BEFORE SUFFICIENT CHECKS ARE MADE TO ALLOW USE OF THE COMMON ERROR CONTROL ROUTINE. THE ERROR WAITS ARE IN HEADER TEST SECTIONS 0 AND 1. THE I COUNTER WILL CONTAIN THE LOCATION OF THE WAIT +1. REFER TO THE APPROPRIATE LISTING TO FIND THE ERROR WAIT. SET THE I COUNTER TO THE BEGINNING OF THE TEST IN WHICH THE FAILING OPERATIUN WAS DETECTED, AND THEN SINGLE INSTRUCTION THROUGH THE TEST TU OETERMINE THE CAUSE OF THE ERROR.

GROUP 2

THE ERRORS IN GROUP 2 ARE THOSE WHICH USE A COMMON ERROR CONTROL ROUTINE. THE I COUNTER CONTAINS THE LOCATIUN OF THE ERROR WAIT +1. REFER TO THE APPROPRIAT LISTING TO FIND THE WAIT.

TABLE 2 SHOWS THE FUNCTIONS OF DATA ENTRY SWITCHES 0 AND 1 IN PROVIDING ERROR ROUTINE CONTROL. SET THE SWITCHES AS OESIRED WHEN AN ERROR WAIT IS ENCOUNTERED.

TABLE 2
HEADER TEST ERROR PROCEOURE OPTIONS

DATA ENTRY SWITCH 0 1 2 3 4 5 6 7 8 9	OESCRIPTION
. 1	LOOP INSTRUCTION
1	BYPASS ERROR WAIT
0 0	RETRY FAILING INSTRUCTION AND HALT IF ERROR OCCURS. PROGRAM WILL PROCEEO IF FAILURE OOES NOT REOCCUR.
1 0	RETRY FAILING INSTRUCTION AND BYPASS HALT IF ERROR OCCURS.PROGRAM WILL PROCEED IF FAILURE DOES NOT REOCCUR.
0 1	CONTINUOUS LOOP ON INSTRUCTION.HALT AT ERROR WAIT IF FAILURE OCCURS. USE THIS SETTING TO DETECT INTERMITTANT ERRURS,AND FOR STEPPING THROUGH A FAILING ROUTINE IN SINGLE INSTRUCTION MOOE.
1 1	CONTINUOUS LOOP ON INSTRUCTION.BYPASS WAIT ON ERROR.USE SETTING TO SCOPE A FAILING INSTRUCTION.

AFTER THE FAILURE IS CORRECTED, AND IF CORE HAS NOT BEEN ALTERED, SET ALL DATA SWITCHES TO 0000 AND PRESS THE START BUTTON TO CONTINUE THE PROGRAM. IF CORE HAS BEEN ALTERED OR DESTROYED, INSURE THAT THE 2310 ACCESS ARM IS IN ITS HOME POSITION, AND THEN RE-ENTER THE COLD START CARD.

4. PRINTOUTS

4.1 STATUS MESSAGES

A001 NO AVAIL CYLS

THIS PRINTOUT INDICATES THAT THERE ARE NO MORE AVAILABLE CYLINDER ON WHICH TO STORE THE DIAGNOSTIC FUNCTION TESTS.

IF THERE HAS BEEN A LARGE AMOUNT OF 'DELETE PROGRAM' ACTIVITY ON THE DIMAL PACK, RELOADING ALL DFT'S WILL BE NECESSARY TO MAKE MORE CYLINDERS AVAILABLE.

4.2 DATA MESSAGES

D001 LOCATION DIRECTORY

PID	CYL	SECT	TSEC	
02	XXX	0	07	(1)
02	XXX	7	01	(2)
02	XXX	0	08	(3)
02	XXX	0	06	(4)
XX	XXX	X	XX	(5)
	XXX	0		(6)

MESSAGE D001 IS THE LISTING OF THE LOCATION DIRECTORY

PID = THE PROGRAM ID
CYL = THE 1ST CYLINDER(IN DECIMAL) ON WHICH THE PROGRAM IS STORED.
SECT = THE 1ST SECTOR ON THE DESIGNATED CYLINDER USED BY THE PROGRAM.
TSEC = TOTAL NUMBER OF SECTORS (IN DECIMAL) REQUIRED TO STORE THE PROGRAM.

LINES 1,2,3 AND 4 (LINE NUMBERS ARE NOT PRINTED) DEFINE THE LOCATION OF THE DIMAL SYSTEM ON THE DISK
LINE 1 IS THE HEADER TEST LOCATION
LINE 2 IS THE COLD START LOADER LOCATION
LINE 3 IS THE LOADER/ORGANIZOR SECTION LOCATION.
LINE 4 IS THE SELECT/EXECUTE SECTION LOCATION.

LINE 5 WILL DEFINE THE LOCATION OF THE 1ST DFT LOADED.

LINE 6 WILL BE PRINTED WHEN MORE THAN 1 CYLINDER IS REQUIRED TO STORE THE PROGRAM. SECTOR 0 WILL ALWAYS BE THE FIRST SECTOR USED.

ALL DFT'S WILL BE LISTED IN THE FORMAT OF LINES 5 AND 6. SAVE PRINTOUT FOR REFERENCE.

D002 EDIT TABLE

EXX00 EDXX 000X XXXX XXXX

MESSAGE D002 IS THE LISTING OF ALL EDIT CONTAINED ON THE DISK PACK. THE FORMAT FOR THE PRINTOUT IS THE HEXIDECIMAL CONTENT OF EACH EDIT CARD READ. SAVE PRINTOUT FOR REFERENCE.

D003 DATA SW CALL SEEK COUNT IS XX

MESSAGE D003 INFORMS THE OPERATOR OF THE SEEK COUNT REQUIRED IN THE DATA ENTRY SWITCH CALL ROUTINE SEEK IOCC. THIS NUMBER IS IN HEX, AND SHOULD BE INSERTED AS 00XX.

THIS MESSAGE IS REFERED TO BY NOTE 1 IN THE DATA ENTRY SWITCH CALL LISTING IN THE APPENDIX SECTION 6.2. SAVE THIS PRINTOUT.

4.3 COMMAND MESSAGES

C001 SET DATA SWS TO FF00 IF DONE

THIS MESSAGE IS PRINTED BY THE LOADER/ORGANIZOR SECTION WHEN THE LAST CARD SEQUENCE HAS BEEN PERFORMED ON INITIAL DISK PACK GENERATION OR WHEN USING THE ADD PROGRAM FEATURE.

IF ALL DESIRED PROGRAMS HAVE BEEN LOADED ON DISK, SET DATA SWITCHES TO FF00 AND PRESS START.

IF MORE PROGRAMS ARE TO BE LOADED, READY THE 1442 WITH THE DFT PROGRAM DECKS AND PRESS START.

C002 ENTER PID TO DELETE IN DATA SWS 00XX

THIS PRINTOUT OCCURS AS A RESULT OF SELECTING THE DELETE PROGRAM OPTION. ENTER THE PID OF THE PROGRAM TO DELETE IN DATA SWITCHES 8 THROUGH 15. ALL PROGRAMS AND ALL EDIT CONTAINING THE INDICATED PID WILL BE DELETED. A NEW LOCATION DIRECTORY, AND EDIT TABLE LISTING IS NOT AN AUTOMATIC FUNCTION OF THE DELETE PROGRAM OPTION. TO OBTAIN NEW LISTINGS, SELECT THE APPROPRIATE OPTION.

C003 RDY 1442 WITH NEW EDIT CARDS

THIS PRINTOUT OCCURS WHEN THE CHANGE EDIT OPTION HAS BEEN SELECTED. PLACE THE NEW EDIT DECK (AS DESCRIBED IN SECTION 3.2.4 CHANGE EDIT ON DIMAL PACK) IN THE 1442 HOPPER AND MAKE THE 1442 READY. AT THE 1800 C.P.U., PRESS THE START BUTTON.

C004 SELECT OPTIONS

THIS MESSAGE INDICATES THAT THE DIMAL LOADER/ORGANIZOR HAS BEEN LOADED AND IS READY TO BE USED. SELECT THE OPTION DESIRED (REFER TO SECTION 3.2 FOR OPERATING INSTRUCTIONS) AND PRESS THE START BUTTON.

C005 RDY 1442 WITH BLANK CARDS

THIS MESSAGE OCCURS DURING INITIAL DISK GENERATION AND DURING THE PUNCH COLD START CARD OPTION OPERATION. READY THE 1442 WITH AT LEAST 8 BLANK CARDS AND PRESS THE 1800 CPU START BUTTON. THE SIX CARDS PUNCHED ARE THE 1 CARD COLD START CALL CARDS FOR THE DIMAL SYSTEM. SAVE THESE CARDS.

C006 SELECT PID IN DATA SWS 00XX

THIS MESSAGE INDICATES THAT THE DIMAL SELECT/EXECUTE SECTION IS IN CORE AND AVAILABLE FOR USE. SELECT THE PID OF THE PROGRAM TO BE SELECTED IN DATA SWITCHES 8 THROUGH 15 AND PRESS THE START BUTTON. REFER TO SECTION 3.3 DIAGNOSTIC PROGRAM SELECTION AND EXECUTION FOR OPERATING INSTRUCTIONS.

4.4 ERROR MESSAGES

LOADER/URGINIZOR SECTION

E001 DISK RD ERR

THIS MESSAGE INDICATES THAT A DSW ERROR EXISTED DN EACH OF 3 ATTEMPTS TO READ THE SECTOR ID. THE PROGRAM WHICH WAS BEING LDADED AT THE TIME OF THE ERROR MUST BE RELOADED. THE CYLINDER ON WHICH THE ATTEMPTED READ WAS BEING MADE WILL BE BYPASSED.

E002 WRONG SECTOR ID READ

THIS MESSAGE INDICATES THAT THE WRONG SECTOR ID WAS READ DN 3 CONSECUTIVE TRIES. THE PROGRAM WHICH WAS BEING LDADED AT THE TIME THE ERROR OCCURRED MUST BE RELOADED. THE CYLINDER ON WHICH THE ATTEMPTED READ WAS BEING MADE WILL BE BYPASSED.

IF MODIFYING AN EXISTING PACK (EXCEPT FOR ADD PROGRAM) PERFORM THE RESTART PROCEDURE. FOR ADD PRDGRAM, PARAGRAPH 1 APPLIES.

E003 DISK WRT ERR

THIS MESSAGE INDICATES THAT A DSW ERROR EXISTED ON EACH OF 3 ATTEMPTS TO WRITE ON THE DISK. THE PROGRAM WHICH WAS BEING LOADED AT THE TIME THE ERROR OCCURRED MUST BE RELDADED. THE CYLINDER ON WHICH THE ATTEMPTED WRITE WAS BEING MADE WILL BE BYPASSED.

E004 MODULO 4 ERR

THIS MESSAGE INDICATES THE DATA ERROR BIT WAS ON IN THE DSW DN EACH OF 3 CONSECUTIVE WRITE-MUDULU 4 READ OPERATIONS. THE PROGRAM WHICH WAS LOADING AT THE TIME OF THE ERROR MUST BE RELOADED. THE CYLINDER ON WHICH THE MODULO 4 CHECK WAS BEING PERFORMED WILL BE BYPASSED.

E005 EDIT CARD ERR

THIS MESSAGE INDICATES THAT THE EDIT CARD JUST READ WAS EITHER OUT OF SEQUENCE OR OOES NOT BELONG TO THE PROGRAM BEHIND WHICH IT WAS PLACED. REMOVE THE EDIT CARDS FROM THE 1442. CORRECT THE CAUSE OF THE FAILURE (PLACE CARDS IN CORRECT SEQUENCE OR OBTAIN THE PROPER SET OF EDIT CARDS) THEN PLACE ALL EOIT CARDS FOR THE PROGRAM JUST LOADED IN THE 1442 HOPPER. PLACE THE REMAINDER OF PROGRAMS TO BE LOADED BEHIND THE EDIT CARDS AND MAKE THE 1442 READY. THEN PRESS THE 1800 CPU START BUTTON. DISK GENERATION SHOULD CONTINUE.

AS AN ALTERNATE PROCEDURE TO THE ABOVE, THE EDIT CARDS MAY BE REENTERED AT THE COMPLETION OF DISK GENERATION BY USING THE CHANGE EDIT FEATURE OF THE DIMAL SYSTEM.

E006 NUT EDIT CARD

THIS MESSAGE IS PRINTED BY THE LOADER/ORGANIZOR SECTION WITH THE CHANGE EDIT OPTION SELECTED. THE CARD JUST READ BY THE PROGRAM WAS NOT AN EDIT CARD. REMOVE THE CARD IN ERRUR AND INSERT THE PROPER CARD. INSURE THAT CORRECT CARD SEQUENCING IS MAINTAINED. EDIT CARDS WHICH HAVE ALREADY BEEN ACCEPTED NEED NOT BE REENTERED. READY THE 1442 READER AND PRESS THE 1800 CPU START BUTTON.

E007 CHECKSUM ERROR

THIS MESSAGE INDICATES THAT A CHECKSUM ERRDR HAS BEEN DETECTED DURING CARD READ OPERATIDNS.

AT THE 1442, REMDVE THE CARDS FRDM THE HOPPER. DEPRESS THE NPRO BUTTON. THE 1ST CARD WHICH ENTERS THE STACKER IS THE CARD WHICH CAUSED THE CHECKSUM ERROR. CHECK THAT THE CARD WAS IN CORRECT SEQUENCE (IMPROPER SEQUENCE WILL CAUSE CHECKSUM ERRORS). IF CARDS WERE OUT OF SEQUENCE, CDRRECT AND PLACE IN THE 1442 HDPPER. DO NUT RELOAD THOSE CARDS WHICH HAVE BEEN ACCEPTED. READY THE 1442 AND PRESS 1800 CPU START BUTTDN.

IF AN OBVIDUS PRDBLEM EXISTS ON THE CARD IN ERROR (TORN, LACED, ETC.) REMDVE THE REMAINDER OF THE CARDS FDR THAT PRDGRAM FROM THE OBJECT DECK STACK, REPLACE THE UNLOADED DECKS IN THE 1442 HOPPER AND MAKE IT READY. AT THE 1800 C.P.U., SET SENSE/PRUGRAM SWITCH 7 AND PRESS THE START BUTTON. CURRECT THE CARD IN ERROR AND ADD THAT PROGRAM AT THE END OF THE STACK IN THE HOPPER OR USE THE ADD PROGRAM FEATURE TO ADD THE PROGRAM IN AT A LATER TIME.

IF NO OBVIOUS ERROR EXISTS, RETRY MAY BE ACCOMPLISHED BY PLACING THE 2 CARDS, WHICH WERE REJECTED DN NPRD, IN FRONT OF THE REMAINING PROGRAM STACK IN THE 1442 HOPPER, MAKE THE 1442 READY AND PRESS THE 1800 CPU START BUTTON.

SELECT/EXECUTE SECTION

E008 DISK RD ERR

THIS MESSAGE INDICATES THAT A DSW ERROR EXISTED ON EACH OF 3 ATTEMPTS TO READ FROM DISK. THE PROGRAM STOPS AT WAIT 40A, B REG = 340A. IF IT IS DESIRED TU EXECUTE THOSE PROGRAMS ALREADY LOADED, SET THE DATA ENTRY SWITCHES TO FF00 AND PRESS THE START BUTTDN. TO RESELECT A PROGRAM, PRESS THE START BUTTON. DIMAL WILL PRINT MESSAGE C006 AND STOP AT WAIT 400, B REG = 3400. SELECT THE DESIRED PID AND PRESS START.

E009 WRONG SECTOR ID READ

THIS MESSAGE INDICATES THAT THE WRONG SECTOR ID WAS READ ON 3 CONSECUTIVE TRIES. FOLLOW THE SAME PROCEDURES AS DESCRIBED FOR E008 ABOVE TO CONTINUE.

E00A PROG EXCEEDED CORE LIMIT

THIS MESSAGE INDICATES THAT THE LAST PROGRAM SELECTED EXCEEDED THE CORE LIMIT OF THE SYSTEM. DIMAL BRANCHES TO THE DIAGNOSTIC MONITOR TO ALLOW EXECUTION OF THOSE PRUGRAMS WHICH HAVE BEEN SUCCESSFULLY LOADED.

E00B PROG LOAD ERR

THIS MESSAGE INDICATES THAT ALL SECTORS ASSIGNED TO A GIVEN PROGRAM WERE READ IN AND A PROGRAM END STATEMENT WAS NOT FOUND. DIMAL WILL RETURN TO WAIT 400 TO ALLOW RESELECTION. IF THE ERROR PERSISTS FOR ANY GIVEN PID, THEN DATA ON THE DISK WAS PROBABLY DESTROYED. THE PROGRAM SHOULD BE DELETED AND THEN ADDED TO THE DISK USING THE DELETE PROGRAM AND ADD PROGRAM OPTIONS OF THE DIMAL LOADER/ORGANIZOR SECTION.

E00C SELECTED PID NOT ON DISK

THE PROGRAM PID ENTERED IN THE DATA ENTRY SWITCHES AT WAIT 400 IS NOT CONTAINED ON THE DIMAL PACK. PROGRAM RETURNS TO WAIT 400 FOR A NEW SELECTION.

5. COMMENTS

THE DIMAL SYSTEM IS DIVIDED INTO 5 MAJOR SECTIONS

1. DIMAL INITIAL LOADER
2. DIMAL HEADER SECTION
3. DIMAL COLD START LOADER
4. DIMAL LOADER/ORGANIZOR SECTION
5. DIMAL SELECT/EXECUTE SECTION

EACH SECTION HAS A DEFINITE FUNCTION AS DESCRIBED IN THE FOLLOWING PARAGRAPHS. DIMAL I/O OPERATIONS ARE PERFORMED WITH MASKED INTERRUPTS IN AN EFFORT TO MINIMIZE THE AMOUNT OF HARDWARE REQUIRED TO USE THIS PROGRAM. A LAYOUT OF THE DISK PACK CONTAINING DIMAL IS SHOWN IN THE APPENDIX SECTION 6.3.

5.1 INITIAL LOADER

THE INITIAL LOADERS FUNCTION IS TO INPUT THE DIMAL OBJECT DECK, WRITE IT ON THE DISK AND THEN CALL IN THE COLD START LOADER WHICH IN TURN INPUTS THE LOADER/ORGANIZOR SECTION. THE LOADER/ORGANIZOR SECTION IS THEN USED TO INPUT THE DFT'S FOR INCLUSION ON THE DISK PACK.

THE INITIAL LOADER DECK IS PUNCHED IN B-B FORMAT. THE 1ST CARD IS THE IPL CARD AND IS USED TO INPUT THE REST OF THE INITIAL LOADER, AND TRANSFER CONTROL TO IT.

THE INITIAL LOADER WILL FIRST READ THE LOADER EDIT CARDS. THE EDIT DEFINES THE DISK DRIVE TO BE USED, THE ADDRESS OF THE CE HISTORY TRACK AND THE OUTPUT DEVICE TO BE USED BY THE DIMAL SYSTEM. A CHECK IS MADE TO ENSURE THAT THE C.E. PACK HAS BEEN PLACED ON THE SPECIFIED DRIVE. THIS IS DONE BY READING SECTOR 3 OF THE HISTORY TRACK AND CHECKING WORD 2 FOR /CEDC.

THE LOADER WILL THEN DEFINE THE FIRST SIX USABLE CYLINDERS, STARTING AT CYLINDER 6, AS THE DIMAL CYLINDERS. THESE 6 CYLINDERS ARE USED AS FOLLOWS

1ST CYLINDER	-	HEADER TEST AND COLD START LOADER.
2ND CYLINDER	-	LOADER/ORGANIZOR SECTION
3RD CYLINGER	-	SELECT/EXECUTE SECTION
4TH CYLINDER	-	WORK CYLINDER 1
5TH CYLINDER	-	WORK CYLINDER 2
6TH CYLINDER	-	LOCATION DIRECTORY AND EDIT TABLE

THE ADDRESSES FOR THESE CYLINDERS WILL BE PLACED IN A USE TABLE ALONG WITH THE EDIT INFORMATION. THIS TABLE WILL BE INCLUDED IN THE COLD START LOADER, LOADER/ORGANIZOR SECTION AND THE SELECT/EXECUTE SECTION PRIOR TO WRITING THESE SECTIONS ON THE DISK.

THE DIMAL DECK IS THEN READ IN AND STORED ON THE DISK AT THE ASSIGNED CYLINDERS. UPON COMPLETION OF THE LOADER OPERATION THE INITIAL LOADER WILL WRITE THE WORD /ABCD ON SECTOR 0 OF THE HISTORY WORK TO DEFINE THE DISK PACK AS CONTAINING DIMAL. THE LOADER THEN CALLS INTO CORE, THE COLD START LOADER AND SETS UP THE NECESSARY CONTROL TO BRING IN THE LOADER/ORGANIZOR SECTION. THE INITIAL LOADER THEN BRANCHES TO THE COLD START LOADER WHICH INPUTS THE LOADER/ORGANIZOR SECTION AND GIVES CONTROL OT IT.

5.2 DIMAL HEADER SECTION

THE HEADER SECTION IS RUN WHENEVER DIMAL IS CALLED BY THE COLD START CARDS OR THE DATA ENTRY SWITCH CALL ROUTINES. IT'S PURPOSE IS TO CHECK OUT THE 1800 INSTRUCTIONS USED BY THE DIMAL SYSTEM.

THE FOLLOWING INSTRUCTIONS ARE NOT CHECKED BY THE HEADER SECTION.

DOUBLE COMPARE (DCM)	MULTIPLY (M)
DOUBLE ADD (AD)	DIVIDE (D)
DOUBLE SUBTRACT (SD)	EXECUTE I/O (XIO)

THE HEADER SECTION IS DIVIDED INTO 7 TESTS. EACH TEST OCCUPIES 1 SECTOR OF THE 1ST DIMAL CYLINDER. THE FUNCTIONS OF EACH TEST FOLLOW.

TEST 1

CHECKS OPERATION OF MDX, BSC AND EOR SHORT FORM. CHECKS THE ABILITY OF THE A REG TO HOLD 1'S, TO LOAD 1'S ON TOP OF 1'S AND TO LOAD 0'S ON TOP OF 1'S. ALSO CHECKED IS THE FLAG BIT AND INDIRECT ADDRESSING.

TEST 2

CHECKS THE READ AND SENSE OF SENSE/PROGRAM, CE AND DATA ENTRY SWITCHES. CHECKS INSTRUCTIONS BSI, SRA, AND, OR, MDX LONG, RTE AND SRT.

TEST 3

CHECKS INSTRUCTIONS RTE, SLA, SLT, STD AND STS.

TEST 4

CHECKS INSTRUCTIONS BSC, BSI AND LDX.

TEST 5

CHECKS INSTRUCTIONS LDX, STX AND A.

TEST 6

CHECKS MACHINE INDEXING AND INSTRUCTIONS BSC INDEXED, S AND MDX.

TEST 7

CHECKS INSTRUCTIONS SLC, SLCA, LDD, STD AND CMP.

THE HEADER SECTION CONTAINS THE CONTROL NECESSARY FOR LOOPING ERRORS LOOPING INSTRUCTIONS, AND BYPASSING ERROR WAITS DURING TROUBLE SHOOTING. REFER TO SECTION 3.6 FOR HEADER TEST ERROR PROCEDURES.

5.3 COLD START LOADER

IT IS THE FUNCTION OF THE COLD START LOADER TO INPUT THE DIMAL SECTION SPECIFIED BY THE COLD START CALL CARD.

DURING INITIAL DIMAL DISK PACK GENERATION, THE INITIAL LOADER CALLS ON THE COLD START LOADER TO INPUT THE LOADER/ORGANIZOR SECTION OF DIMAL.

ON COLD START CARD OR DATA ENTRY SWITCH COLD START CALLS, THE COLD START LOADER IS BROUGHT INTO CORE BY HEADER TEST 6 AFTER SUCCESSFUL OPERATION OF THE HEADER SECTION. THE COLD START LOADER THEN REFERENCES A CONSTANT IN THE CALL (WILL BE AT LOCATION DDOC) TO DETERMINE WHICH DIMAL SECTION TO LOAD, WILL LOAD THAT SECTION AND BRANCH TO IT.

THE COLD START LOADER IS STORED ON SECTOR 7 OF THE 1ST DIMAL CYLINDER AND IS LOADED INTO CORE AT LOCATION 350D DECIMAL.

5.4 DIMAL LOADER/ORGANIZOR SECTION

IT IS THE FUNCTION OF THE LOADER/ORGANIZOR SECTION TO INPUT THE DIAGNOSTIC PROGRAM DECKS AND WRITE THEM ON THE DISK PACK. THIS SECTION IS ALSO USED TO MODIFY A PREVIOUSLY GENERATED DIMAL PACK.

THE LOADER/ORGANIZOR SECTION IS CALLED FROM DISK BY THE INITIAL LOADER WHEN GENERATING A NEW DIMAL PACK, AND BY A COLD START CARD WHEN MODIFYING AN EXISTING DIMAL PACK.

WHEN GENERATING A NEW PACK, THIS SECTION WILL FIRST UP DATE THE LOCATION DIRECTORY TO INCLUDE THE LOCATION OF THE DIMAL SYSTEM ON THE DISK PACK. THE SECTION THEN PREPARES TO INPUT THE PROGRAM DECKS. PRIOR TO USING ANY CYLINDER FOR PROGRAM STORAGE, THE CYLINDER IS CHECKED FOR A USABLE CONDITION. ALL BAD CYLINDERS ARE BYPASSED.

THE PROGRAMS ARE STORED ON DISK ACCORDING TO THE FOLLOWING SCHEME.

A) B-8 FORMAT CARDS ARE NON MONITOR DEPENDENT PROGRAMS AND ARE STORED ON DISK IN CORE IMAGE, 320 WORDS PER SECTOR.

B) 12-4 FORMAT CARDS FOR ABSOLUTE ASSEMBLIES, ARE NON MONITOR DEPENDENT PROGRAMS, OR THE DIAGNOSTIC MONITOR ITSELF. THESE PROGRAMS ARE ALSO STORED ON DISK IN CORE IMAGE, 320 WORDS PER SECTOR.

C) 12-4 FORMAT CARDS REPRESENTING RELOCATABLE PROGRAM ASSEMBLIES, ARE DIAGNOSTIC MONITOR DEPENDENT PROGRAMS AND ARE STORED ON DISK IN CARD IMAGE, 4 CARDS PER SECTOR.

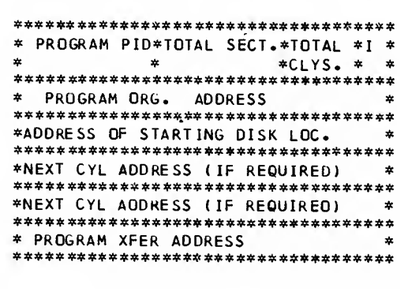
THE IMAGE USED IS ENTERED IN THE IMAGE INDICATOR (0=CORE IMAGE, 1 = CARD IMAG WHICH IS CONTAINED IN THE LOCATION DIRECTORY ENTRIES FOR EACH PROGRAM.

CARD 1 (HEADER CARD) OF THE 12-4 DECKS IS NOT STORED ON THE DISK NOR ARE THE CARDS WHICH CONTAIN THE WAIT OR TRAP CONSTANTS USED IN THE WAIT DESCRIPTION AT THE FRONT OF THE PROGRAM LISTING. THESE CARDS ARE IDENTIFIED BY ADDRESS STARTING AT 3001 OR 7001.

WHEN WRITING PROGRAMS ON DISK IN CORE IMAGE, ALL BLOCKS OF STORAGE RESERVED BY THE PROGRAM (DEFINED BY BSS STATEMENTS) ARE WRITTEN AS ZEROS ON DISK.

THE TOTAL NUMBER OF SECTORS USED, THE ADDRESSES OF ALL CYLINDERS USED, THE PROGRAM ORG ADDRESS AND THE PROGRAM TRANSFER ADDRESS ARE SAVED FOR INCLUSION IN THE LOCATION DIRECTORY.

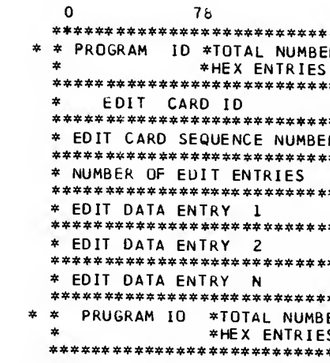
THE LOCATION DIRECTORY IS UPDATED FOR EACH PROGRAM UPON DETECTION OF THAT PROGRAMS END RECORD. THE FORMAT OF THE LOCATION DIRECTORY FOLLOWS



THE 'I' IN BIT 15 OF THE 1ST ENTRY IS THE IMAGE INDICATOR DESCRIBED PREVIOUSLY.

IF A PROGRAM DOES NOT REQUIRE 3 CYLINDERS FOR STORAGE, THEN THE TRANSFER ADDRESS ENTRY WILL FOLLOW THE LAST USED CYLINDER ADDRESS ENTRY.

AFTER EACH PROGRAM IS WRITTEN ON DISK A CHECK IS MADE TO SEE IF EDIT CARDS FOLLOW THAT PROGRAM. IF EDIT CARDS ARE PRESENT AND CORRECT, THEY WILL BE INCLUDED IN THE EDIT TABLE. THE FORMAT OF THE EDIT TABLE FOLLOWS.



THE ENTRIES INDICATED BY (*) ARE CONTROL WORDS WHICH PRECEED EVERY CARD ENTERED IN THE TABLE. THIS WORD IS USED BY THE DIMAL SYSTEM AND IS NOT INCLUDED WHEN THE EDIT DATA IS TRANSFERED TO THE USER PROGRAM.

AS EACH NEW PROGRAM IS READ IN, IT WILL BE WRITTEN ON THE NEXT AVAILABLE SECTOR. THEREFORE A PROGRAM MAY START ON ANY SECTOR OF THE CYLINDER PRESENTLY BEING USED. AFTER SECTOR 7 HAS BEEN WRITTEN, PROGRAM STORAGE WILL CONTINUE ON THE NEXT SEQUENTIAL AVAILABLE CYLINDER, SECTOR 0. THOSE CYLINDERS DEFINED BY THE 2310 FUNCTION TEST ARE NOT USED AS PROGRAM STORAGE CYLINDERS.

WHEN ALL PROGRAMS HAVE BEEN WRITTEN ON THE DISK, THE LOADER/ORGANIZOR SECTION WILL SAVE THE NEXT AVAILABLE STORAGE SECTOR BY WRITING ITS ADDRESS UN SECTOR 0, WORD 3 OF THE CE HISTORY TRACK. THE SECTION THEN LISTS THE CONTENT OF THE LOCATION DIRECTORY AND EDIT TABLE, PUNCHES 6 COLD START CARDS AND PRINTS A SEEK COUNT TO BE USED WHEN ENTERING THE COLD START CALL VIA THE DATA ENTRY SWITCHES.

WHEN DISK PACK MODIFICATION IS BEING PERFORMED, THE OPTIONS OF ADD PROGRAM, LIST LOCATION DIRECTORY, LIST EDIT TABLE, PUNCH COLD START CALL CARDS AND LIST DATA ENTRY SWITCH COLD START SEEK COUNT USE THE SAME SUBROUTINES AS ARE USED DURING INITIAL DISK PACK GENERATION. TO PERFORM THE OPTIONS OF DELETE PROGRAM AND CHANGE EDIT, TWO SPECIAL SUBROUTINES HAVE BEEN INCLUDED.

SUBROUTINE DLPGM IS USED TO DELETE PROGRAMS. THIS SUBROUTINE REMOVES ALL ENTRIES FROM THE LOCATION DIRECTORY WHICH PERTAIN TO THE PID SPECIFIED TO BE DELETED. IF THE PROGRAM HAD BEEN STORED MORE THAN ONCE, THEN ALL PROGRAMS WITH THE SAME PID ARE DELETED. (THE PROGRAM ITSELF IS NOT ERASED FROM THE DISK, ONLY THE LOCATION DIRECTORY ENTRIES). FURTHER THE DLPGM SUBROUTINE CALLS ON THE DELETE EDIT SUBROUTINE WHICH REMOVES ALL EDIT DATA WHICH PERTAINS TO THE PROGRAM BEING DELETED, FROM THE EDIT TABLE.

THE CHGED SUBROUTINE IS USED TO ACCOMPLISH THE OPTION OF CHANGING EDIT. THIS SUBROUTINE INPUTS EDIT CARDS, CHECKS THEIR CORRECTNESS, CAUSES OLD EDIT WITH THE SAME PID TO BE DELETED FROM THE EDIT TABLE, AND THEN CALLS ON THE EDIT SUBROUTINE WHICH UPDATES THE EDIT TABLE WITH THE NEW EDIT DATA. AN EDIT TABLE LIST IS ALSO PROVIDED AFTER ALL CHANGES HAVE BEEN MADE.

5.5 DIMAL SELECT/EXECUTE SECTION

THE PURPOSE OF THIS SECTION IS TO CALL INTO CORE, FROM DISK, THE DIAGNOSTIC PROGRAM SPECIFIED BY THE OPERATOR.

THE SELECT/EXECUTE SECTION IS CALLED INTO CORE BY A 1 CARD COLD START CALL OR BY A CALL ROUTINE ENTERED VIA THE DATA ENTRY SWITCHES.

THE SELECT/EXECUTE SECTION IS DIVIDED INTO 2 PARTS, AN INTERFACE, AND THE MAIN BODY OF THE SECTION.

THE INTERFACE PORTION PERMANENTLY RESIDES IN CORE FROM LOCATION 0050 THROUGH 012B HEX. ALL PROGRAMS WHICH RETURN TO DIMAL WILL DO SO VIA THE INTERFACE, ENTERING AT LOCATION 0050. THE MAIN PORTION OF DIMAL ALSO ENTERS THE INTERFACE PORTION TO LOAD ABSOLUTE PROGRAMS OR PRIOR TO TRANSFERING CONTROL TO A DIAGNOSTIC PROGRAM.

THE MAIN BODY OF THE SELECT/EXECUTE SECTION USES CORE LOCATIONS 012C THROUGH 07FE HEX AND SHARES THESE LOCATIONS WITH EITHER THE DIAGNOSTIC MONITOR OR A NON MONITOR PROGRAM.

WHEN A PROGRAM HAS BEEN ENTERED IN THE DATA ENTRY SWITCHES FOR SELECTION, THE DIMAL SECTION WILL FIRST DETERMINE WHETHER THE PROGRAM IS MONITOR DEPENDENT OR STANDALONE (NON MONITOR DEPENDENT).

STANDALONE PROGRAMS

IF A STANDALONE PROGRAM IS BEING REQUESTED, THE SEL/EXC SECTION WILL SEARCH THE LOCATION DIRECTORY FOR THAT PID. WHEN THE PID IS FOUND, IT'S LOCATION ON DISK WILL BE STORED IN THE INTERFACE SECTION. A CHECK IS THEN MADE TO DETERMINE IF THERE IS ANY EDIT DATA FOR THIS PROGRAM, BY SEARCHING THE EDIT TABLE. AN EDIT INDICATOR IS SET IF ANY EDIT DATA IS FOUND. A BRANCH TO LOCATION 0050 OF THE INTERFACE SECTION IS THEN PERFORMED.

THE INTERFACE SECTION WILL SAVE CORE LOCATIONS 012C THROUGH 07FF, WHICH NOW CONTAIN THE DIMAL SECTION, ON DIMAL WORK CYLINDER 2, INPUT THE SELECTED DIAGNOSTIC PROGRAM AND BRANCH TO IT.

IF THE PROGRAM JUST LOADED REQUIRES EDIT, IT WILL RETURN TO DIMAL BY BRANCHING TO LOCATION 0050 OF THE INTERFACE SECTION. THE INTERFACE SECTION WILL PERFORM A CORE SWAP, SAVING THE DIAGNOSTIC PROGRAM ON WORK CYLINDER 1 AND INPUTTING THE DIMAL SECTION FROM WORK CYLINDER 2. DIMAL WILL THEN PLACE THE DATA FROM ONE EDIT CARD IN LOCATIONS 0 AND UP AND RETURN TO THE INTERFACE SECTION. THE INTERFACE SECTION WILL AGAIN PERFORM A CORE SWAP AND EXIT TO THE USER PROGRAM. THE EDIT OPERATION DESCRIBED WILL BE REPEATED EACH TIME THE USER PROGRAM REQUESTS EDIT DATA.

FOLLOWING PROGRAM EDIT, PROGRAM EXECUTION CAN OCCUR.

IF THE PROGRAM TERMINATES BY RETURNING TO LOCATION 0050, THE SELECT/EXECUTE SECTION WILL BE BROUGHT BACK INTO CORE AND WILL SET UP TO ALLOW SELECTION OF THE NEXT PROGRAM.

IF THE PROGRAM TERMINATES BY HALTING WITHIN ITSELF, THE DIMAL SECTION MAY BE RELOADED BY SETTING THE I REG TO 0050 AND CONTINUING FROM THAT POINT.

DIAGNOSTIC MONITOR DEPENDENT PROGRAMS

WHEN THE PID ENTERED IN THE DATA ENTRY SWITCHES IS A DIAGNOSTIC MONITOR DEPENDENT PROGRAM, THE DIMAL SECTION WILL 1ST DETERMINE IF THE DIAGNOSTIC MONITOR HAS BEEN LOADED INTO CORE. IF IT HAS NOT, THE PID REQUESTED WILL BE SAVED AND THE DIAGNOSTIC MONITOR LOADED. THE DIAGNOSTIC MONITOR IS LOADED AND EDITED IN THE SAME MANNER AS DESCRIBED FOR STANDALONE PROGRAMS. BEFORE RETURNING TO DIMAL TO LOAD THE SELECTED PROGRAM, THE DIAGNOSTIC MONITOR WILL STOP AT WAIT 2 TO ALLOW PROGRAM LOAD OPTIONS TO BE SELECTED.

WHEN THE DIAGNOSTIC MONITOR RETURNS TO DIMAL, DIMAL WILL LOCATE THE SELECTED PROGRAM ON DISK, LOAD IT INTO CORE, RELOCATING IT IF NECESSARY, AND THEN EDIT THE PROGRAM. DIMAL WILL THEN BRANCH TO LOCATION 0050, WHERE A CORE SWAP OF DIMAL AND THE DIAGNOSTIC MONITOR OCCURS. A BRANCH IS THEN MADE TO THE PROGRAM JUST LOADED.

IF THE BOOTSTRAP MODE OF D.M. OPERATION WAS SELECTED, THE DM WILL ALLOW EXECUTION OF THE PROGRAM TO TAKE PLACE. UPON PROGRAM TERMINATION, THE DM WILL RETURN TO THE INTERFACE SECTION. AGAIN THE CORE SWAP WILL OCCUR AND THE DIMAL SECTION WILL SET UP TO ALLOW SELECTION OF THE NEXT DIAGNOSTIC PROGRAM.

IN THE OVERLAP MODE OF OPERATION, THE DM WILL RETURN TO DIMAL AFTER EACH PROGRAM HAS BEEN LOADED FOR THE NEXT PROGRAM SELECTION. TO INDICATE THAT THE LAST PROGRAM TO BE LOADED IS NOW ENTERED IN THE BIT SWITCHES, SWITCHES 0 THROUGH 7 SHOULD BE SET TO FF ALONG WITH THE PID IN SWITCHES 8 THROUGH 15, OR IF NO FURTHER PROGRAMS ARE TO BE LOADED, THEN SET THE SWITCHES TO FF00. FOLLOWING THE LOAD OF THE LAST PROGRAM, THE DIAGNOSTIC MONITOR WILL ALLOW OPTION SELECTION AND PROGRAM EXECUTION.

TO RETURN TO DIMAL FROM OVERLAP OPERATIONS, SET THE I REG TO 0050 AND CONTINUE FROM THAT POINT.

THE SELECTION OF DM DEPENDENT PROGRAMS AND STAND ALONE PROGRAMS CAN BE INTERMIXED. THAT IS FOLLOWING THE OPERATION OF A MONITOR PROGRAM, A STANDALONE MAY BE SELECTED AND OPERATED, FOLLOWED BY THE SELECTION AND OPERATION OF A DM PROGRAM ETC.

6. APPENDIX

6.1 EDIT PROCEDURE

THE DIMAL INITIAL LOADER MUST BE EDITED FOR PROPER OPERATION. PUNCH 2 CARDS AS SHOWN BELOW.

CARD 1:

ENTRY 1 IS THE SECTOR ID FOR THE CE HISTORY TRACK SECTOR 0. THIS ID WILL BE 0638 HEX ON A DISK PACK WITH A USABLE CYLINDER #199 DEC. IF THE 2315 DISK INITIALIZATION PROGRAM FINDS CYLINDER 199 TO BE BAD, THEN ENTER THE SAME ID, INTO THE DIMAL EDIT CARD, THAT IS USED TO DEFINE THE ALTERNATE HISTORY TRACK TO THE 2315 PROGRAM.

ENTRY 2 IS THE AREA CODE OF THE DISK DRIVE TO BE USED IN GENERATING THE DIMAL PACK. AREA CODES ARE AS FOLLOWS.

1ST 2310 AREA CODE 2000

2ND 2310 AREA CODE 4000

3RD 2310 AREA CODE 4800

ENTRY 3 IS THE OUTPUT DEVICE INDICATOR 0000 - USE 1053/1816, 0001 USE 1443

CARD 2:

CARD 2 IS THE TERMINATOR CARD. PUNCH AS SHOWN

REFER TO DOCUMENTATION FOR PAPER TAPE EDIT PROGRAM (PID 08BB) TO GENERATE PAPER TAPE EDIT.

	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	CONSTANT	ENTRY 1: CONSTANT	ENTRY 1: SECTOR ID FOR CE HISTORY TRACK SECTOR 0	ENTRY 2: DISK DRIVE AREA CODE	ENTRY 2: CONSTANT	ENTRY 3: CONSTANT	ENTRY 3: 0=1053/1816, 1=1443
COLUMN	1	2 3 4 5	6	7 8 9 10	11	12 13 14 15	16	17 18 19 20	21	26	31	
CARD 1	E	0 2 0 0		E D 0 0		0 0 0 3		0		0 0	0 0 0	
CARD 2	E	0 2 0 0		F F F F								

6.2 DATA ENTRY SWITCH COLD START CALL ROUTINES

THESE ROUTINES MAY BE USEO IN PLACE OF THE COLO START CALL CAROS TO CALL THE OIMAL SYSTEM FROM THE DISK. THE ROUTINES ARE IOENTICLE TO THUSE PUNCHEO IN THE COLD START CARDS, ANO CAN THEREFORE BE USED AS A LISTING FOR THE CAROS.

TO ENTER THE COLO START CALL ROUTINES, PROCEEO AS FOLLOWS.

1. PERFORM THE GENERAL UPERATING INSTRUCTIONS STEPS 3.2.1.A THROUGH 3.2.1.F IF OISK PACK MOOIFICATION IS TO BE OONE, OR GENERAL OPERATING INSTRUCTIONS STEPS 3.3.1.A THROUGH 3.3.1.F IF PROGRAM SELECTION ANO EXECUTIUN IS TO BE OONE.
2. INSURE THAT THE I CUUNTER IS AT 0000. PRESS RESET BUTTON IF NOT.
3. SET THE MODE SWITCH TO LOAO.
4. REFERENCE THE OESIREO OATA ENTRY SWITCH ROUTINE. THE ROUTINES ARE IOENTIFIEO IN THE SAME MANNER AS THE COLO START CARDS. REFERENCE SECTION 3.2.1 C AND H. FOR IO EXPLANATION OF LOAOER/ORGANIZOR CALLS, ANO SECTION 3.3.1 G ANO H FOR SELECT/EXECUTE CALLS.
5. ENTER THE HEX INSTRUCTIONS IN THE OATA ENTRY SWITCHES PRESSING THE START BUTTON AFTER EACH ENTRY.
6. AFTER ALL INSTRUCTIUNS HAVE BEEN ENTEREO, SET THE MOOE SWITCH TO RUN, PRESS THE RESET 8UTTUN, THEN PRESS START. EXECUTION OF THE CALL RUUTINE SHOULD BEGIN. RETURN TO SECTIONS 3.2 OR 3.3 FOR THE REMAINDER OF THE OPERATING PRUCEOURES.

LOAOER/ORGANIZOR CALL ROUTINES

*CALL ROUTINE IO *	A1L *	A2L *	A3L *	SYMBOLIC LISTING*
*LOCATION *	INSTRUCTIUN*	INSTRUCTION*	INSTRUCTION*	TAG*INST*MOO*
0000	0800	0800	0800	XIO SK
0001	080A	080A	080A	CK1 XIO SN
0002	1002	1002	1002	SLA 2
0003	4828	4828	4828	BSC +Z
0004	70FC	70FC	70FC	MDX CK1
0005	080A	080A	080A	XIO RO
0006	0805	0805	0805	CK2 XIU SN
0007	1002	1002	1002	SLA 2
0008	4828	4828	4828	BSC +Z
0009	70FC	70FC	70FC	MDX CK2
000A	700A	700A	700A	MOX /15
0008	0DAD	00A0	00AD	OC /00A0
000C	0001	0001	0001	SN OC /0001
0000	2701	4701	4F01	OC /X701
000E	NOTE =1	NOTE =1	NOTE =1	SK DC /00XX
000F	2400	4400	4C00	UC /X400
0010	0012	0012	0012	RO OC /0012
0011	2600	4600	4E00	OC /X600
0012	0141	0141	0141	OC /0141

SELECT/EXECUTE CALL ROUTINES

*CALL ROUTINE IO *	A1S *	A2S *	A3S *	SYMBOLIC LISTING*
*LOCATION *	INSTRUCTION*	INSTRUCTION*	INSTRUCTION*	TAG*INST*MOO*
0000	0800	0800	0800	XIO SK
0001	080A	080A	080A	CK1 XIO SN
0002	1002	1002	1002	SLA 2
0003	4828	4828	4828	BSC +Z
0004	70FC	70FC	70FC	MOX CK1
0005	080A	080A	080A	XIO RO
0006	0805	0805	0805	CK2 XIO SN
0007	1002	1002	1002	SLA 2
0008	4828	4828	4828	BSC +Z
0009	70FC	70FC	70FC	MOX CK2
000A	700A	700A	700A	MOX /15
0008	0DA0	00A0	00A0	OC /00A0
000C	0002	0002	0002	SN OC /0002
0000	2701	4701	4F01	DC /X701
000E	NOTE =1	NOTE =1	NOTE =1	SK OC /00XX
000F	2400	4400	4C00	OC /X400
0010	0012	0012	0012	RO OC /0012
0011	2600	4600	4E00	OC /X600
0012	0141	0141	0141	OC /0141

NOTE 1

LOCATION /000E IN THE COLO START CALLS SHOULO CONTAIN THE SEEK COUNT. THIS SEEK CUUNT IS SUPPLIEO TO THE OPERATOR IN MESSAGE 0003. MESSAGE 0003 IS PRINTEO BY THE LOAOER/ORGANIZER SECTION UPON CUMPLETIUN OF THE OIMAL PACK GENERATION. THE SEEK COUNT IS NORMALLY 0006 UNLESS CYLINOER 6 IS FOUNO TO BE BAO. IF CYLINOER 6 IS BAO, THEN THE SEEK COUNT REFERANCES THE 1ST GOOO CYLINDER AFTER CYLINOER 6.

6.3 DIMAL DISK PACK LAYOUT

THE CE DIMAL PACK WILL BE ARRANGED AS SHOWN PROVIDED ALL CYLINDERS ARE USABLE. IF BAD CYLINDERS ARE DETECTED THEY WILL BE BYPASSED, AND THE CYLINDER ASSIGNMENTS WILL BE DISPLACED ACCORDINGLY.

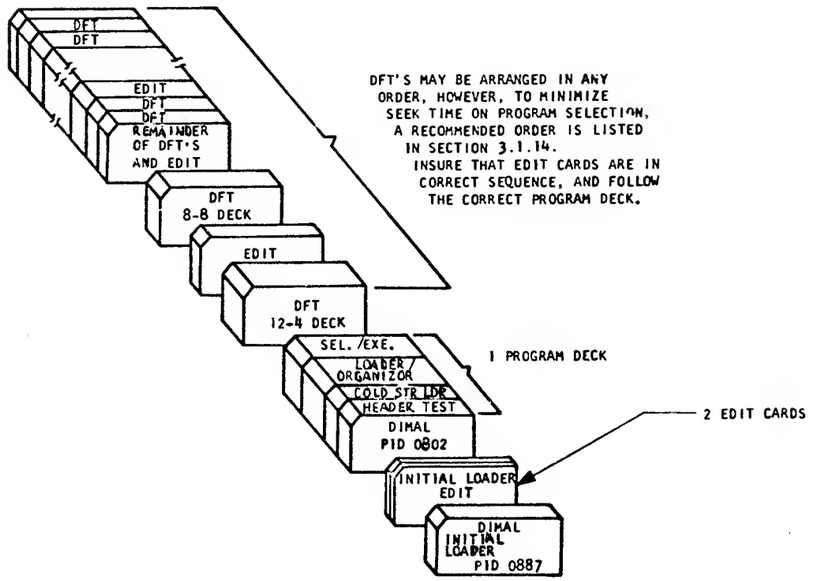
CYLINDER NUMBER	SECTOR NUMBER	CONTENTS
0 THROUGH 5	ALL	DIAGNOSTIC PROGRAM USE
6	0	DIMAL HEADER TEST
6	1	DIMAL HEADER TEST
6	2	DIMAL HEADER TEST
6	3	DIMAL HEADER TEST
6	4	DIMAL HEADER TEST
6	5	DIMAL HEADER TEST
6	6	DIMAL HEADER TEST
6	7	DIMAL COLD START LOADER
7	ALL	DIMAL LOADER/ORGANIZER SECTION
8	ALL	DIMAL SELECT/EXECUTE SECTION
9	ALL	DIMAL WORK CYLINDER 1
10	ALL	DIMAL WORK CYLINDER 2
11	0	DIMAL LOCATION DIRECTORY
11	1 AND 2	DIMAL EDIT TABLE
12 THROUGH 89	ALL	DIAGNOSTIC PROGRAMS STORAGE
90 THROUGH 110	ALL	CE ALIGNMENT TRACKS
111 THROUGH 196	ALL	DIAGNOSTIC PROGRAMS STORAGE
197 THROUGH 202	ALL	DIAGNOSTIC PROGRAM USE
199	0	DIMAL WRITES INDICATOR WORD AND SAVES THE NEXT AVAILABLE SECTOR ID ON THIS SECTOR

6.4 REFERENCE FIGURES

FIGURE 1

DIMAL SYSTEM OBJECT DECK AND DFT OBJECT DECK STACKING
FOR INITIAL DIMAL DISK PACK GENERATION

IF PAPER TAPE VERSION, SUBSTITUTE PAPER TAPE FOR CARD DECKS.



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                        ********************************************          80 3000 20
                        *     1800 ON-LINE DIAGNOSTIC MONITOR      *          80 3000 30
                        *                                          *          80 3000 40
                        *              ** MPXOM **                 *          80 3000 50
                        *                                          *          80 3000 60
                        ********************************************          80 3000 70
                        *                                          *          80 3000 80
                        * A DIAGNOSTIC MONITOR DESIGNED TO OPERATE *          80 3000 90
                        * THE OFF LINE DIAGNOSTIC FUNCTION TESTS IN *          80 300 100
                        * THE ON LINE ENVIRONMENT OF THE 1800 MPX   *          80 300 110
                        * SYSTEM. MPXDM OPERATES AS A BATCH JOB IN  *          80 300 120
                        * THE TIME SHARING MODE OF THE MPX SYSTEM.  *          80 300 130
                        *                                          *          80 300 140
                        *                                          *          80 300 150
                        *     PROGRAM ENTRY POINT = DMIN           *          80 300 160
                        *     NORMAL EXIT POINT   = MONXT          *          80 300 170
                        *                                          *          80 300 180
                        ********************************************          80 300 190
                        *                                          *          80 300 200
0000 0 0300             MPXDM OC      /0300      MPXOM ID                     80 300 210
                        *                                          *          80 300 220
                        *   *   *   *   *   *   *   *   *   *      *          80 300 230
                        *                                          *          80 300 240
                        *     MPX FIXED AREA REFERENCES EQUATES    *          80 300 250
                        *                                          *          80 300 260
                        *   *   *   *   *   *   *   *   *   *      *          80 300 270
                        *TAG*         *LOC *         *CONTENTS *    *WORD*     80 300 280
                        *                                                     80 300 290
007F 0                  CON   EQU     127       FIXED AREA POINTER           80 300 300
0000 0                  $STRT EQU     000       BRANCH TO U-MONITOR       0  80 300 310
0003 0                  $BIND EQU     003       TRACE LEVEL BUSY IND      3  80 300 320
0004 0                  $TMAC EQU     004       INTERVAL TIMER A          4  80 300 330
0005 0                  $TMBC EQU     005       INTERVAL TIMER B          5  80 300 340
0006 0                  $TMCC EQU     006       INTERVAL TIMER C          6  80 300 350
0007 0                  $MESG EQU     007       PRNT INTUP ERROR MESS I   7  80 300 360
0009 0                  $TRAC EQU     009        TRACE INTERRUPT          9  80 300 370
0025 0                  $UTIL EQU     037            CALL THE UTILITY    37  80 300 380
0027 0                  $D8   EQU     039        CONSTANT                 39  80 300 390
0028 0                  $BMIC EQU     040       BEGINNING ADDR OF MIC     40  80 300 400
0029 0                  $UT   EQU     041       TIME-SHARE ACTIVE IND     41  80 300 410
002A 0                  $OM1  EQU     042         CONSTANT -1             42  80 300 420
002B 0                  $OM10 EQU     043         CONSTANT -10            43  80 300 430
002C 0                  $AESP EQU     044       ENTRY TO NO-RESPONSE SUB  44  80 300 440
002D 0                  $ITB  EQU     045       TIMERS BUSY INDICATOR     45  80 300 450
002E 0                  $UMK1 EQU     046   MASK REGISTER %0-13¤          46  80 300 460
0030 0                  $UMK2 EQU     048   MASK REGISTER %14-23¤         48  80 300 470
0032 0                  $MK1  EQU     050   MASK LEVELS 0-13              50  80 300 480
0034 0                  $MK2  EQU     052   MASK LEVELS 14-23             52  80 300 490
0036 0                  $WK4  EQU     054       PSEUDO ACCUMULATUR %WK4¤  54  80 300 500
0037 0                  $WK5  EQU     055       PSEUDO ACCUMULATUR %WK5¤  55  80 300 510
0038 0                  $NPID EQU     056   NUN PROCESS INDICATOR         56  80 300 520
0039 0                  $MICS EQU     057       MAG TAP SENSE POINTER     57  80 300 530
003B 0                  $TASK EQU     059       TASK IN CORE INDICATOR    59  80 300 540
003C 0                  $TIMA EQU     060       ADDR OF TIMER A SUBROUTN  60  80 300 550
003D 0                  $TIM8 EQU     061       ADDR OF TIMER B SUBROUTN  61  80 300 560
003E 0                  $TIM1 EQU     062       PROG TIMER  1             62  80 300 570
003F 0                  $XEQ1 EQU     063       ADDR OF P-TIMER 1 XEQ TB  63  80 300 580
0053 0                  $2790 EQU     083        2790 COMMUN AREA             80 300 590
0059 0                  $TOIA EQU     089       DIAGNOSTIC TIMER          89  80 300 600
005A 0                  $DXEQ EQU     090       ADDR OF XEQ TABLE         90  80 300 610
005B 0                  $DSW  EQU     091       UN-OFF BRANCH             91  80 300 620
005C 0                  $CLK  EQU     092       PROGRAMED CLOCK           92  80 300 630
005E 0                  $EITC EQU     094       BRANCH TO ITC EXIT ROUT   94  80 300 640
005F 0                  $OM50 EQU     095        CONSTANT -50             95  80 300 650
0060 0                  $D3   EQU     096        CONSTANT 3               96  80 300 660
0061 0                  $PAUS EQU     097       PAUSE WORD                97  80 300 670
0062 0                  $IOTT EQU     098       AREA BUSY TEST ENTRY      98  80 300 680
0063 0                  $IOST EQU     099       SET AREA BUSY ENTRY       99  80 300 690
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0064 0                  $PRTT EQU     100       0 MEANS PRT INT ERR MES  100  80 300 700
0065 0                  $IBTA EQU     101       ADDR OF INT BRANCH TABL  101  80 300 710
0066 0                  $VCOR EQU     102   BEGIN ADD OF VARIABLE CORE   102  80 300 720
0067 0                  $TVLU EQU     103   TV LOCATION %XR-3¤           103  80 300 730
0068 0                  $TVWK EQU     104   INTERRUPT WORK LEVEL %XR-3¤  104  80 300 740
0069 0                  $ICLN EQU     105       INT CL ENDING ADDR       105  80 300 750
006A 0                  $BTAD EQU     106       ADDR OF BOUNDARY TABLE   106  80 300 760
006B 0                  $EDEN EQU     107       EX DIR ENDING ADDR       107  80 300 770
006C 0                  $DAY  EQU     108       DAY COUNTER              108  80 300 780
006D 0                  $YEAR EQU     109       USER SET YEAR            109  80 300 790
006E 0                  $FMIC EQU     110       ADDR OF SYS EX CLENT     110  80 300 800
006F 0                  $CLNT EQU     111       ADDR OF SYS EX CLNT      111  80 300 810
0070 0                  $D10  EQU     112        CUNSTANT                112  80 300 820
0071 0                  $D11  EQU     113        CONSTANT                113  80 300 830
0072 0                  $D12  EQU     114        CONSTANT                114  80 300 840
0073 0                  $EEND EQU     115        BULK I/O ABORT ENTRY PT      80 300 850
0074 0                  $IMIC EQU     116   ENT ADDR TO MIC FOR I/O      116  80 300 860
0075 0                  $IOSA EQU     117       ENT ADDR TO IOSAVE       117  80 300 870
0076 0                  $IOEX EQU     118       ENT ADDR TO IOEXIT       118  80 300 880
0077 0                  $TSST EQU     119       T/S BUSY                 119  80 300 890
0078 0                  $IOER EQU     120       ENTRY ADDR TO I/O ERR    120  80 300 900
0079 0                  $STQT EQU     121       ADDR OF CL QUEUE TABLE   121  80 300 910
007A 0                  $NQUE EQU     122       MAX NO. OF CL QUE ENTRS  122  80 300 920
007B 0                  $NILV EQU     123       NO. OF INTERRUPT LEVELS  123  80 300 930
007C 0                  $BULK EQU     124       ENT ADDR TO BULKN        124  80 300 940
007D 0                  $LST  EQU     125                                125  80 300 950
007E 0                  $SYS  EQU     126                                126  80 300 960
007F 0                  $0600 EQU     127        CONSTANT                127  80 300 970
0080 0                  $0500 EQU     128        CONSTANT                128  80 300 980
0081 0                  $F800 EQU     129        CONSTANT                129  80 300 990
0082 0                  $0FF8 EQU     130        CUNSTANT                130  80 301 000
0083 0                  $00FF EQU     131        CONSTANT                131  80 301 010
0084 0                  $8000 EQU     132        CONSTANT                132  80 301 020
0085 0                  $D1   EQU     133        CUNSTANT                133  80 301 030
0086 0                  $D2   EQU     134        CONSTANT                134  80 301 040
0087 0                  $D4   EQU     135        CONSTANT                135  80 301 050
0088 0                  $D5   EQU     136        CONSTANT                136  80 301 060
0089 0                  $D7   EQU     137        CONSTANT                137  80 301 070
008A 0                  $0FFF EQU     138        CONSTANT                138  80 301 080
0088 0                  $2000 EQU     139        CONSTANT                139  80 301 090
008C 0                  $0180 EQU     140        CONSTANT                140  80 301 100
008D 0                  $D320 EQU     141        CONSTANT                141  80 301 110
008E 0                  $LINK EQU     142   LINK WORD                    142  80 301 120
008F 0                  $SMIC EQU     143   SUSPEND EXIT TO MIC          143  80 301 130
0090 0                  $U321 EQU     144        CONSTANT                144  80 301 140
0091 0                  $1STC EQU     145            ADDR OF USABLE V.C  145  80 301 150
0092 0                  $FF00 EQU     146        CONSTANT                146  80 301 160
0093 0                  $F000 EQU     147        CONSTANT                147  80 301 170
0094 0                  $FF87 EQU     148        CONSTANT                148  80 301 180
0095 0                  $TOUT EQU     149   TRACE EXIT INSTRUCTION       149  80 301 190
0096 0                  $PROC EQU     150   P-TIME BUSY IND              150  80 301 200
0097 0                  $U13  EQU     151   CUNSTANT                     151  80 301 210
0098 0                  $SEBT EQU     152   ADDR OF SYS EX EBT           152  80 301 220
0099 0                  $ECPR EQU     153   ENT ADDR TO EAC PRINT        153  80 301 230
009A 0                  $QZSA EQU     154   ENT ADDR TO QZSAVE           154  80 301 240
009B 0                  $QZEX EQU     155   ENT ADDR TO QZEXIT           155  80 301 250
009C 0                  $EXCM EQU     156   START ADDR OF EX COMMON      156  80 301 260
009D 0                  $LEXC EQU     157   LENGTH OF EXECUT CUMMON      157  80 301 270
009E 0                  $MBOR EQU     158   MESSAGE BUFFER TAB ADDR      158  80 301 280
009F 0                  $D14  EQU     159   CONSTANT                     159  80 301 290
00A0 0                  $PI00 EQU     160   PROG INT IOCC LEV 0-13       160  80 301 300
00A2 0                  $PI11 EQU     162   PROG INT IOCC LEV 14-23      162  80 301 310
00A4 0                  $ABRT EQU     164   RESTART NON-PROC MONITR      164  80 301 320
00A5 0                  $0F00 EQU     165   CONSTANT                     165  80 301 330
00A6 0                  $LURG EQU     166   WHAT DEV IS LSTPT            166  80 301 340
00A7 0                  $SURG EQU     167   WHAT DEV IS SYSPT            167  80 301 350
00A8 0                  $CORE EQU     168       CURE SIZE -1             168  80 301 360
00A9 0                  $00F0 EQU     169   CUNSTANT                     169  80 301 370
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00AA 0          $000F EQU     170     CONSTANT                          170  80301380
00AB 0          $NPIN EQU     171     USEO BY TSC                       171  80301390
00AC 0          $TVSA EQU     172     ENT AOOR TO TVSAVE                172  80301400
00AD 0          $TVEX EQU     173     ENT AOOR TO TVEXIT                173  80301410
00AE 0          $ANEO EQU     174     ENO AOOR OF SKEL I/U              174  80301420
00AF 0          $0319 EQU     175     CONSTANT                          175  80301430
0080 0          $TSLK EQU     176     TIME SHARE LOCK IN SW             176  80301440
0081 0          $FFFO EQU     177     CONSTANT                          177  80301450
0082 0          $CBAS EQU     178     VALUE UF C-BASE FDR P-T           178  80301460
0083 0          $OPME EQU     179     ENT AOOR TO MON READ RU           179  80301470
00B4 0          $T1BS EQU     180     REAL TIME CLOCK UPDATE            180  80301480
0085 0          $T2BS EQU     181     REAL TIME CLOCK UPDATE            181  80301490
00B6 0          $EXIT EQU     182      EXIT SUBROUTINE ENTRY            182  80301500
00B7 0          $8008 EQU     183     CONSTANT                          183  80301510
00B8 0          $8010 EQU     184     CONSTANT                          184  80301520
00B9 0          $TYPE EQU     185     ENT AOOR TO TYPEN                 185  80301530
00BA 0          $PRNT EQU     186     ENT AOOR TO       PRNTN           186  80301540
00BB 0          $ERMS EQU     187     AOOR OF ERR MESS TABLE            187  80301550
00BC 0          $QLCT EQU     188     AOOR OF QVEA-S LCT                188  80301560
00BO 0          $024  EQU     189     CONSTANT                          189  80301570
00BE 0          $D25  EQU     190     CONSTANT                          190  80301580
00BF 0          $09   EQU     191     CONSTANT                          191  80301590
00C0 0          $D6   EQU     192     CONSTANT                          192  80301600
00C1 0          $ROAO EQU     193     AOOR RELDAD INFO TABLE            193  80301610
00C2 0          $TSPR EQU     194     PRIORITY NO. OF T/S ENO           194  80301620
00C3 0          $PSA  EQU     195     CALL SPECIAL IND                  195  80301630
00C4 0          $UPDA EQU     196     PROG TIMER NOT BSY BRNH           196  80301640
00C5 0          $F360 EQU     197     FIO TSX/360 FORMAT INO            197  80301650
00C6 0          $ECRL EQU     198     ENT AOOR TO EACRL                 198  80301660
00C7 0          $RSAV EQU     199     ENT AOOR TO RSAVE                 199  80301670
00C8 0          $2310 EQU     200     DEVICE TABLE AODR TABLE           200  80301680
0000 0          $1053 EQU     208                                       208  80301690
00D8 0          $1443 EQU     216                                       216  80301700
0009 0          $1442 EQU     217                                       217  80301710
000B 0          $PAPT EQU     219                                       219  80301720
000C 0          $MATP EQU     220                                       220  80301730
00DO 0          $AIIN EQU     221                                       221  80301740
00E1 0          $OINP EQU     225                                       225  80301750
00E2 0          $DADP EQU     226                                       226  80301760
00E3 0          $1627 EQU     227                                       227  80301770
00E4 0          $FIBF EQU     228     ADOR OF FIO BUFFERS               228  80301780
00E5 0          $SCHQ EQU     229     ENT ADDR TO SRCHQ                 229  80301790
00E6 0          $DQLS EQU     230      ENT ADDR TO OQLST                230  80301800
00E7 0          $OKPH EQU     231     OISK PHY OEVICE TABLE             231  80301810
00EF 0          $TYPH EQU     239      1053 PHY DEVICE TABLE            239  80301820
00F7 0          $8001 EQU     247     CONSTANT                          247  80301830
00F8 0          $8002 EQU     248     CONSTANT                          248  80301840
00F9 0          $8004 EQU     249     CONSTANT                          249  80301850
00FA 0          $TM8Z EQU     250     TIME 8USY FOR SUSPN SUB           250  80301860
00FB 0          $PUTQ EQU     251     ENT ADDR TO PUTQ                  251  80301870
00FC 0          $GETQ EQU     252     ENT AODR TO GETQ                  252  80301880
00FO 0          $DIRC EQU     253     ENT ADDR TO OIRCL                 253  80301890
00FE 0          $STPR EQU     254     ENT ADDR TO STPRT                 254  80301900
00FF 0          $STRL EQU     255     ENT AOOR TO STREL                 255  80301910
0100 0          $CEML EQU     256     ON-LINE OIAG MDO LEVEL            256  80301920
0101 0          $ECOK EQU     257     ENTRY AODR TO EAC DISK            257  80301930
0102 0          $RSA  EQU     258     ERROR SAVE A-REG                  258  80301940
0103 0          $RSQ  EQU     259     ERROR SAVE Q-REG                  259  80301950
0104 0          $RS1  EQU     260     ERROR SAVE XR1                    260  80301960
0105 0          $RS2  EQU     261     ERROR SAVE XR2                    261  80301970
0106 0          $RS3  EQU     262     ERROR SAVE XR3                    262  80301980
0107 0          $8KSA EQU     263     ENT ADDR TO BKSAVE                263  80301990
0108 0          $8KEX EQU     264     ENT ADDR TO BKEXIT                264  80302000
0109 0          $GETO EQU     265     GETQO ENTRY POINT                 265  80302010
010A 0          $PUTO EQU     266     PUTQO ENTRY POINT                 266  80302020
0108 0          $IOSK EQU     267     ENT AODR TO RSTDK SUBR            267  80302030
010C 0          $IPRT EQU     268     ENT ADDR TO IINT8 SU8R            268  80302040
0100 0          $RELD EQU     269     ENT AOOR TO RS/LD DPT S           269  80302050
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010E 0          $TVST EQU     270     ENTRY ADOR TO TVSET               270  80302060
010F 0          $8OSH EQU     271     ENTRY ADOR TO 8NDSH               271  80302070
0110 0          $IOOR EQU     272     ENTRY ADOR TO IODRT               272  80302080
0111 0          $QUEA EQU     273     ENT ADDR TO QUEA                  273  80302090
0112 0          $VCTV EQU     274                 V.C. T.V.             274  80302100
0113 0          $SRTV EQU     275     SPAR TV                           275  80302110
0114 0          $SETV EQU     276                 SYS EX T.V.           276  80302120
0115 0          $C1TV EQU     277     CORE LOAD AREA  1 TV              277  80302130
0116 0          $C2TV EQU     278     CORE LOAD AREA  2                 278  80302140
0117 0          $C3TV EQU     279     CURE LUAD AREA  3                 279  80302150
0118 0          $C4TV EQU     280     CORE LOAD AREA  4                 280  80302160
0119 0          $C5TV EQU     281     CURE LUAD ARFA  5                 281  80302170
011A 0          $C6TV EQU     282     CORE LOAD AREA  6                 282  80302180
0118 0          $C7TV EQU     283     CDRE LUAD AREA  7                 283  80302190
011C 0          $C8TV EQU     284     CORE LOAD AREA  8                 284  80302200
0110 0          $C9TV EQU     285     CDRE LUAD AREA  9                 285  80302210
011E 0          $C10V EQU     286     CORE LDAD AREA 10                 286  80302220
011F 0          $C11V EQU     287     CURE LDAO ARFA 11                 287  80302230
0120 0          $C12V EQU     288     CORE LOAD AREA 12                 288  80302240
0121 0          $C13V EQU     289     CORE LDAD AREA 13                 289  80302250
0122 0          $C14V EQU     290     CORE LOAD AREA 14                 290  80302260
0123 0          $C15V EQU     291     CURE LOAD AREA 15                 291  80302270
0124 0          $C16V EQU     292     CURE LDAD AREA 16                 292  80302280
0125 0          $C17V EQU     293     CORE LDAD AREA 17                 293  80302290
0126 0          $C18V EQU     294     CURE LUAD AREA 18                 294  80302300
0127 0          $C19V EQU     295     CORE LDAO AREA 19                 295  80302310
0128 0          $C20V EQU     296     CORE LUAO AREA 20                 296  80302320
0129 0          $C21V EQU     297     CDRE LUAD AREA 21                 297  80302330
012A 0          $C22V EQU     298     CORE LUAO AREA 22                 298  80302340
012B 0          $C23V EQU     299      CURE LDAD AREA 23 TV             299  80302350
                *                                                       80302360
                *     LIST DISPLACEMENT EQUATES                         80302370
                *                                                       80302380
0000 0          LINKB EQU     0       LINK/BUSY WURD                    80302390
0001 0          EXTYP EQU     1       EXIT TYPE                         80302400
0002 0          SYSR1 EQU     2       SYSTEM RESERVED 1                 80302410
0003 0          SYSR2 EQU     3       SYSTEM RESERVED 2                 80302420
0004 0          SYSR3 EQU     4       SYSTEM RESERVED 3                 80302430
0005 0          SYSR4 EQU     5       SYSTEM RESERVED 4                 80302440
0006 0          ERP   EQU     6       ERROR PARAMETER                   80302450
0007 0          CP    EQU     7       CONTROL PARAMETER                 80302460
0008 0          IOAP  EQU     8       I/O AREA PARAMETER                80302470
                *                                                       80302480
                *     STANDARD OEVICE TABLE EQUATES                     80302490
                *                                                       80302500
FFF2 0          OVSTR EQU     -14     START OF DEVICE TABLE             80302510
FFF5 0          DVISS EQU     -11     LOCN OF IOCR INTERRUPT SECT       80302520
FFF6 0          DVERR EQU     -10     HAROWARE ERROR COUNT              80302530
FFF7 0          DVSSS EQU     -9      RESERVEO                          80302540
FFF8 0          DVONF EQU     -8      ON/OFF INDICATOR                  80302550
FFF9 0          OVOSW EQU     -7      LAST DSW                          80302560
FFFA 0          OVDOW EQU     -6      OSW OR-WORO                       80302570
FFFB 0          DVRES EQU     -5      RESPUNSE INDICATUR                80302580
FFFC 0          DVINL EQU     -4      OEVICE INTERRUPT LEVEL            80302590
FFFD 0          OVID  EQU     -3      DEVICE IDENTIFICATION             80302600
0000 0          DVNPR EQU     0       NUMBER OF PRIORITIES              80302610
0001 0          DVXEQ EQU     1       ADDRESS OF XEQ LIST               80302620
                *                                       *               80302630
                *   *   *   *   *   *   *   *   *   *   *               80302640
                *     HIGH CORE COMMUNICATION AREA EQUATES  *           80302650
                *   *   *   *   *   *   *   *   *   *   *               80302660
                *TAG*         *LOC *        *CONTENTS *    * WURO       80302670
FF69 0          MSGWC EQU     /FF69   MESSAGE AREA WURD CNT*   1        80302680
FF6A 0          PHONG EQU     /FF6A   HEADING'CUST ENG'AREA*   2        80302690
FF6F 0          WDCNT EQU     /FF6F   I/O AREA WURO COUNT  *   7        80302700
FF70 0          INOUT EQU     /FF70   START OF I/O AREA    *   8        80302710
FFC0 0          CODE  EQU     /FFC0   PRINTER CODE TABLE   *  88        80302720
FFD1 0          NEG   EQU     /FFD1   NEG SIGN IN CODE TBL *105        80302730
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FFD2 0          EDITA EQU    /FFD2     ADRS TO STORE EDIT   *106  80 30 2740
FFD3 0          DTADR EQU    /FFD3     MPX DEV TBL ADDRESS  *107  80 30 2750
FFD7 0          ONOFF EQU    /FFD7     DEV ON/OFF STATUS    *111  80 30 2760
FFD8 0          ABRTX EQU    /FFD8     ABORT RTN EXIT ADRS  *112  80 30 2770
FFD9 0          LCLID EQU    /FFD9     ID OF LOADER IN CORE *113  80 30 2780
FFDA 0          ACTIV EQU    /FFDA     ADDRESS OF ACTIVE PID*114  80 30 2790
FFDB 0          XEQSW EQU    /FFDB     DFT EXECUTING(1=XEQ) *115  80 30 2800
FFDC 0          LOGAD EQU    /FFDC     LOG TERMINATION ADRS *116  80 30 2810
FFDD 0          OUTDV EQU    /FFDD     OUTPUT DEV (0=1053)  *117  80 30 2820
FFDE 0          TIMCT EQU    /FFDE     DIAG TIMER TIME COUNT*118  80 30 2830
FFDF 0          DMCTL EQU    /FFDF     CONTROL RTN ADDRESS  *119  80 30 2840
FFE0 0          DFTCW EQU    /FFE0     DFT COMPATABILITY WRO*120  80 30 2850
FFE1 0          TOIND EQU    /FFE1     TIME OUT IND FOR DFT *121  80 30 2860
FFE2 0          ARBSY EQU    /FFE2     ADRS AREA BUSY INCR  *122  80 30 2870
FFE3 0          DFTIS EQU    /FFE3     ADRS DFT INTERRUPT SW*123  80 30 2880
FFE4 0          DFTIA EQU    /FFE4     ADRS DFT INT SERV SUB*124  80 30 2890
FFE5 0          ETADR EQU    /FFE5     MPXDM EDIT TBL ADDRS *125  80 30 2900
FFE6 0          ETPTR EQU    /FFE6     MPXDM DDEF POINTER   *126  80 30 2910
FFE7 0          A8ORT EQU    /FFE7     ADRS ABORT RTN(A8RT) *127  80 30 2920
FFE8 0          ETSSV EQU    /FFE8     TIME SHARE STATUS    *128  80 30 2930
FFE9 0          ETSST EQU    /FFE9     TIME SHARE LOCKED(=1)*129  80 30 2940
FFEA 0          NTTIM EQU    /FFEA     TIME OUT SW (0=TMOUT)*130  80 30 2950
FFEB 0          NLINT EQU    /FFEB     INTRP SW (0=LAST INT)*131  80 30 2960
FFEC 0          BYICR EQU    /FFEC     AREA BSY INCREMENTED *132  80 30 2970
FFED 0          TIMON EQU    /FFED     TIMER IN PROGRESS=1  *133  80 30 2980
FFEE 0          DTIVS EQU    /FFEE     DEV TBL INT VECT SAVE*134  80 30 2990
FFEF 0          MSKON EQU    /FFEF     MASK IN PROGRESS     *135  80 30 3000
FFF0 0          STATS EQU    /FFF0     INTERFACE STATUS WORD*136  80 30 30 10
FFF1 0          DFTCF EQU    /FFF1     ADRS DFT MLSCF       *137  80 30 30 20
FFF2 0          DFTID EQU    /FFF2     ADRS DFT PID         *138  80 30 30 30
FFF3 0          DMBGN EQU    /FFF3     ADRS MPXDM PST       *139  80 30 30 40
FFF4 0          DFTBG EQU    /FFF4     ADRS TO LOAD DFT     *140  80 30 30 50
FFF5 0          BEGIN EQU    /FFF5     ADRS BEGIN RTN(BGIN) *141  80 30 30 60
FFF6 0          START EQU    /FFF6     ADRS START RTN(STRT) *142  80 30 30 70
FFF7 0          END   EQU    /FFF7     ADRS END RTN (MEND)  *143  80 30 30 80
FFF8 0          LOG   EQU    /FFF8     ADRS LOG RTN (LG)    *144  80 30 30 90
FFF9 0          ERROR EQU    /FFF9     ADRS ERROR RTN(ERR)  *145  80 30 3100
FFFA 0          REQDV EQU    /FFFA     ADRS REQDV RTN(RQDV) *146  80 30 3110
FFFB 0          RELDV EQU    /FFF8     ADRS RELDV RTN(RLDV) *147  80 30 3120
FFFC 0          DMISS EQU    /FFFC     ADRS MPXDM ISS(DMIR) *148  80 30 3130
FFFD 0          DFTOP EQU    /FFFD     ADRS-CTRL PASS TO DFT*149  80 30 3140
FFFE 0          MPXOP EQU    /FFFE     ADRS-CTRL PASS TO MAX*150  80 30 3150
                *                                                  80 30 3160
                ************************************************  80 30 3170
                *        MPXDM - INITIALIZATION ROUTINE          *  80 30 3180
                ************************************************  80 30 3190
                *                                                *  80 30 3200
                *                  ** DMIN **                    *  80 30 3210
                *                                                *  80 30 3220
                *     THIS ROUTINE IS ENTERED ONLY AT            *  80 30 3230
                *     PROGRAM LOAD TIME AND IS USED TO           *  80 30 3240
                *     INITIALIZE MPXDM FOR OPERATION.            *  80 30 3250
                *                                                *  80 30 3260
                *     DMIN RESIDES IN THE LOW END OF             *  80 30 3270
                *     VARIABLE CORE AND WILL BE OVERLAYED        *  80 30 3280
                *     BY THE LOADING OF THE DIAGNOSTIC           *  80 30 3290
                *     FUNCTION TEST TO BE RUN.                   *  80 30 3300
                *                                                *  80 30 3310
                *     DMIN FUNCTIONS ARE                         *  80 30 3320
                *                                                *  80 30 3330
                *     1.VERIFY THAT THE VERSION OF MPX AND       *  80 30 3340
                *       MPXDM ARE COMPATABLE. TERMINATE          *  80 30 3350
                *       OPERATION IF THEY ARE NOT.               *  80 30 3360
                *     2.SET UP THE HIGH CORE COMMUNICATIONS      *  80 30 3370
                *       AREA WITH REQUIRED DATA AND DFT          *  80 30 3380
                *       TRANSFER VECTORS.                        *  80 30 3390
                *     3.COMPUTE THE RELOCATION FACTOR TO BE      *  80 30 3400
                *       USED WHEN LOADING THE DFT.               *  80 30 3410
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                *     4.INPUT THE MPXDM EDIT CARDS.              *  80 30 3420
                *     5.STORE THE APPROPRIATE PRINT CODE IN      *  80 30 3430
                *       THE HCCA ACCORDING TU THE EDITED         *  80 30 3440
                *       OUTPUT DEVICE.                           *  80 30 3450
                *       A. IF THE 1443 IS THE SPECIFIED          *  80 30 3460
                *          OUTPUT OEVICE,AND IT IS FOUNO TO      *  80 30 3470
                *          BE UNAVAILABLE,THEN DMIN WILL         *  80 30 3480
                *          FORCE THE USE OF THE 1053/1816.       *  80 30 3490
                *     6.LOG MESSAGE D002 - MPXDM LOCATION        *  80 30 3500
                *       IN CORE.                                 *  80 30 3510
                *                                                *  80 30 3520
                *     CALLED ROUTINES.                           *  80 30 3530
                *                                                *  80 30 3540
                *         1. LOG   - MPXDM PRINT ROUTINE         *  80 30 3550
                *         2. MPOM2 - EDIT CARD LOADER            *  80 30 3560
                *         3. MCTRL - MPXDM CONTROL ROUTINE       *  80 30 3570
                *                                                *  80 30 3580
                *     CALLED SU8ROUTINES.                        *  80 30 3590
                *                                                *  80 30 3600
                *         1. SETCD - PRINT CODE SETUP            *  80 30 3610
                *                                                *  80 30 3620
                * POSSIBLE ABORT CONDITIONS.                     *  80 30 3630
                *                                                *  80 30 3640
                * 1.MPX AND MPXDM ARE NOT AT THE SAME            *  80 30 3650
                *   VERSION LEVEL.                               *  80 30 3660
                *                                                *  80 30 3670
                * ROUTINE ENTRY    OMIN                          *  80 30 3680
                * ROUTINE EXIT     OMIXT                         *  80 30 3690
                *                                                *  80 30 3700
                ************************************************  80 30 3710
                *                                                *  80 30 3720
0001 0 C400 0100 DMIN  LO   L  $CEML      FETCH MOX VERSION NM8R   80 30 3730
0003 1 6600 008E       LDX  L2 VERSN      SET CONSTANTS INDEX      80 30 3740
0005 0 F200            EOR   2 VERSN-VERSN CK IF # MPXDM VERSION   80 30 3750
0006 1 4C20 0068       BSC  L  CPTER,Z    BRANCH IF SYS INCOMPAT   80 30 3760
                *                                                  80 30 3770
0008 0 6700 FF69       LDX  L3 MSGWC      SETUP CLEAR INDEX        80 30 3780
000A 0 1010            SLA    16          CLEAR HIGH CORE          80 30 3790
0008 0 D300       OMINA STO   3 0         * COMMUNICATIONS         80 30 3800
000C 0 7301            MDX    3 1          *  AREA                  80 30 3810
000D 0 70FD            MDX    DMINA        *                        80 30 3820
000E 0 6700 FFC0       LDX  L3 C00E       IX3 = HCCA BASE REF      80 30 3830
0010 0 C202            LD     2 ADR1-VERSN FETCH DM EDIT AREA ADDRS 80 30 3840
0011 0 D312            STO    3 EDITA-CODE * ADDRESS AND SET IN     80 30 3850
0012 0 D325            STO    3 ETADR-CODE  *  COMM AREAS          80 30 3860
0013 0 C203            LD     2 ADR2-VERSN FETCH DM MAIN LINE AODRS 80 30 3870
0014 0 D333            STO    3 DMBGN-CODE MAIN LINE IN COM AREA    80 30 3880
0015 0 D31A            STO    3 ACTIV-CODE SET POLL IND # MPXOM     80 30 3890
0016 0 C207            LO     2 ADR6-VERSN FETCH CNTRL SECTN ADORS  80 30 3900
0017 0 D31F            STO    3 DMCTL-COOE SET IN COMM AREA         80 30 3910
0018 0 C204            LD     2 ADR3-VERSN FETCH ABORT RTN ADDRS    80 30 3920
0019 0 D327            STO    3 ABORT-CODE *AND SET IN XFER VECT    80 30 3930
001A 0 C208            LD     2 AOR7-VERSN FETCH A8ORT RTN EXIT     80 30 3940
001B 0 D318            STO    3 A8RTX-CODE *ADRS-SET IN CUMM AREA   80 30 3950
001C 0 C205            LD     2 ADR4-VERSN FETCH INIT LOAO AOORS    80 30 3960
001D 0 4804            BSC    E           SKIP IF EVEN ADDRS        80 30 3970
001E 0 7002            MDX      *&2                                 80 30 3980
001F 1 8400 0994       A    L  K1          MAKE ADDRS ODD           80 30 3990
0021 0 D334            STO    3 DFTBG-CODE  SET IN COMM AREA        80 30 4000
0022 0 920C            S      2 8ASE-VERSN  GENERATE RELOCATION      80 30 40 10
                *                           *FACTOR.LOAD ADORESS     80 30 40 20
                *                           *MINUS BASE UF 2047      80 30 40 30
0023 1 D400 0FCE       STO  L  RELFC        SAVE RELOCATION FACTOR   80 30 40 40
0025 0 C206            LD     2 ADR5-VERSN  FETCH DM INTR RTN ADORS  80 30 40 50
0026 0 D33C            STO    3 DMISS-CODE  *ADRS ANO STORE IN HCCA  80 30 40 60
0027 0 C071            LD       NEG3        FETCH NO RESP TIME CNT   80 30 40 70
0028 0 D31E            STO    3 TIMCT-COOE STORE TIME COUNT IN HCCA  80 30 40 80
0029 0 627F            LDX    2 CON         SET FIXED AREA INDEX     80 30 40 90
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```
002A 0 0AB3              XIO  X2 $MK1-CON   MASK LEVELS 0 - 13          80304100
002B 0 0A85              XIU  X2 $MK2-CON   MASK LEVELS 14 - 23         80304110
002C 0 6C00 FFFE         STX  L  MPXOP      SET MPX IN UPERATION INO    80304120
002E 0 4480 0063         BSI  I  $IOST      CALL TO GET AREA BUSY WO    80304130
0030 0 0001              DC      1          ONE PARAMETER               80304140
0031 1 0032              DC      *          MPXDM AREA LOCATIUN         80304150
0032 0 D322              STO     3 ARBSY-CODE  SAVE AREA BUSY WORD      80304160
0033 0 1010              SLA     16         CLEAR MPX IN                80304170
0034 0 033E              STO     3 MPXOP-COOE  * OPERATION INDICATOR    80304180
                     *                                                  80304190
                     *   LOAD INTERFACE TRANSFER VECTORS                80304200
                     *                                                  80304210
0035 0 63F9              LOX     3 -7       SET MOVE INDEX              80304220
0036 1 C700 00A8 OMINB LO    L3 TVECT+7     FETCH XFER VECTDR           80304230
0038 0 D700 FFFC         STO L3 8EGIN&7     STORE IN XFER VECT ADDR     80304240
003A 0 7301              MOX     3 1        SKIP WHEN OONE              80304250
003B 0 70FA              MDX     DMIN8      LOOP                        80304260
003C 1 6600 00AE         LDX  L2 HOG53      PRESET INDEX TO STURE       80304270
003E 0 403C              BSI     SETCO      8RNH TO SETUP OUTPUT COOE   80304280
                     *                                                  80304290
                     *   INPUT EOIT CARDS VIA MPDM2                     80304300
                     *                                                  80304310
003F 0 C058              LD      DM2ID      FETCH LOCAL MPOM2 IO        80304320
0040 0 D400 FFD9         STO  L  LCLIO      SET IN HCCA CK WORD         80304330
0042 1 D400 1238         STO  L  ABM2       SAVE IN ABORT MESSAGE       80304340
0044 1 4400 102D         BSI  L  MPDM2      CALL LOCAL MPDM2-EOIT       80304350
0046 0 C4B0 FFD2         LO   I  EOiTA      FETCH OUTPUT DEV DOEF       80304360
0048 1 E400 0996         AND  L  K000F      SAVE CHANNEL BITS           80304370
004A 1 F400 0996         EOR  L  K000F      TEST FOR F - NO CHAN        80304380
004C 0 4B08              BSC     +          SKIP IF 1443 IS SEL DEV     80304390
004D 0 7010              MDX     DMINC      8RANCH IF 1053 IS SEL DEV   80304400
                     *                                                  80304410
                     *   VERIFY THAT 1443 IS DEFINED IN THE    *        80304420
                     *   SYSTEM AND IS ON-LINE. FORCE 1053 AS  *        80304430
                     *   OUTPUT DEVICE IF 1443 NOT AVAILABLE.  *        80304440
                     *                                                  80304450
004E 0 C400 00U8         LD   L  $1443      FETCH 1443 DT AUDR          80304460
0050 0 4818              BSC     &-         SKIP IF DEFINED             80304470
0051 0 700C              MOX     DMINC      BRANCH-FORCE 1053           80304480
0052 0 D001              STO     *&1                                    80304490
0053 0 6500 0000         LDX  L1 *-*        IX1 # DT AUDRESS            80304500
0055 0 710E              MOX     1 14       AOJUST IX                   80304510
0056 0 C1F8              LO   X1 DVONF      FETCH ON/OFF IND            80304520
0057 1 4C18 005E         BSC  L  DMINC,+-   BRANCH IF 1443 UFF LINE     80304530
                     *                                                  80304540
0059 1 6600 00C5         LDX  L2 HDG43      SET INDEX TO STORE          80304550
005B 0 6C00 FFDD         STX  L  OUTDV      SET 1443 INDICATOR          80304560
005D 0 401D              BSI     SETCU      BRNH TO SETUP OUTPUT CODE   80304570
                     *                                                *  80304580
                     *   UUTPUT MESSAGE D002-MPXDM LOCATION           *  80304590
                     *                                                *  80304600
005E 0 4480 FFF8     DMINC BSI  I  LUG      CALL LOG ROUTINE            80304610
0060 1 00DC              DC      LCMSG      MESSAGE ADDRESS             80304620
0061 1 005E              DC      DMINC      BUSY RETORN                 80304630
0062 0 0000              DC      /0000      TERMINATIUN TYPE            80304640
0063 0 C033              LD      ADR8       FETCH MAIN LINE ABURT       80304650
0064 0 D400 FF08         STD  L  ABRTX      *EXIT ADR-SET IN HCCA       80304660
                     *                                                  80304670
0066 0 4C80 FFDF     DMIXT BSC  I  DMCTL    BRANCH TO CONTROL SECT      80304680
                     *                                                *  80304690
                     *   MPX-MPXDM VERSIONS ARE INCOMPATA8LE.  *        80304700
                     *   OUTPUT MESSAGE VIA MPX TYPEN RUUTINE  *        80304710
                     *   AND ABORT ON-LINE OPERATIONS.         *        80304720
                     *                                         *        80304730
0068 0 6C00 FFFE     CPTER STX  L  MPXOP    SET MPX IN OP IND           80304740
                     *                                                  80304750
006A 0 4480 00B9         BSI  I  $TYPE      CALL MPX 1053 PRINT RTN     80304760
006C 1 009B              DC      LIST       ADDR OF I/O LIST            80304770
```



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006D 0 1010              SLA     16         CLEAR MPX IN                80304780
006E 0 D400 FFFE         STO  L  MPXOP      *OPERATION INDICATOR        80304790
0070 0 C02A              LD      LIST       TEST LINK/BUSY              80304800
0071 1 4C20 0070         8SC  L  *-3,Z      8RANCH IF BUSY              80304810
0073 1 C400 00A1         LD   L  LIST&6     FETCH ERROR PARAMETER       80304820
0075 1 F400 1140         EOR  L  K3         TEST FOR NOT READY          80304830
0077 1 4C18 0068         BSC  L  CPTER,&-   BRANCH IF NOT READY         80304840
                     *                                                  80304850
0079 0 4480 0086     EXIT1 BSI  I  $EXIT    CALL MPX EXIT RUUTINE       80304860
                     *                                                *  80304870
                     *----------------------------------------------*   80304880
                     *        OMIN - SETCO SUBROUTINE               *   80304890
                     *----------------------------------------------*   80304900
                     *                                              *   80304910
                     *     THIS SU8RUUTINE IS USEU TO STORE THE     *   80304920
                     *     SPECIFIED PRINT CODE IN THE HIGH CURE    *   80304930
                     *     COMMUNICATIONS AREA.                     *   80304940
                     *                                              *   80304950
                     *                  CALLING SEQUENCE            *   80304960
                     *                                              *   80304970
                     *                  BSI   SETCD                 *   80304980
                     *                  IX 2 = HEAOING CODE ADRS    *   80304990
                     *                                              *   80305000
                     *     CALLED ROUTINES.                         *   80305010
                     *                                              *   80305020
                     *         NONE                                 *   80305030
                     *                                              *   80305040
                     *     CALLEU SUBROUTINES.                      *   80305050
                     *                                              *   80305060
                     *         NONE                                 *   80305070
                     *                                              *   80305080
                     * POSSIBLE ABORT CONDITIONS.                   *   80305090
                     *                                              *   80305100
                     * NONE                                         *   80305110
                     *                                              *   80305120
                     * SUBRUUTINE ENTRY     SETCU                   *   80305130
                     * SUBRUUTINE EXIT      SETXT                   *   80305140
                     *                                              *   80305150
                     *----------------------------------------------*   80305160
                     *                                                  80305170
007B 0 0000          SETCD DC       *-*        RETURN ADDRESS          80305180
                     *                                                  80305190
007C 0 61F8              LDX    1 -5          IX 1 = NM8R WRDS TO MUVE  80305200
007D 0 C200          SETC1 LD     2 0         FETCH HEADING CUDE        80305210
007E 0 D500 FF6F         STO  L1 PHDNG+5      STORE IN COMM AREA        80305220
0080 0 7201              MDX    2 1           INCR FETCH INUEX          80305230
0081 0 7101              MDX    1 1           SKIP WHEN ALL MUVEU       80305240
0082 0 70FA              MOX    SETC1         8RANCH IF NOT             80305250
                     *                                                  80305260
0083 1 6700 00CA         LDX  L3 C4353        IX = CODE TA8LE ADDRESS   80305270
0085 0 61EE              LDX    1 -18         IX 1 = NM8R WDRUS TO MUVE 80305280
0086 0 C300          SETC2 LO     3 0         FETCH HEX CUDE            80305290
0087 0 D500 FFD2         STO  L1 CODE+18      STURE IN COMM AREA        80305300
0089 0 7301              MDX    3 1           INCR FETCH INDEX          80305310
008A 0 7101              MDX    1 1           SKIP WHEN ALL MUVEU       80305320
008B 0 70FA              MDX    SETC2         8RANCH IF NOT             80305330
                     *                                                  80305340
008C 1 4C80 007B     SETXT BSC  I  SETCU      RETURN TO CALLER          80305350
                     *                                              *   80305360
                     *                CONSTANTS                     *   80305370
                     *                                              *   80305380
008E 0 0002          VERSN DC       2         MPXDM VERSION IND         80305390
                     *                                              *   80305400
008F 0 0B88          MXTIM DC       3000      3 SEC MAX DIAG TIMER CT   80305410
0090 1 091D          ADR1  DC       DMEDT     ADDRESS OF EDIT AREA      80305420
0091 1 0911          ADR2  DC       DMPID     ADDRESS OF DM PST         80305430
0092 1 1217          ADR3  UC       A8RT      ADURESS UF A8ORT RTN      80305440
0093 1 0001          ADR4  DC       DMIN      ADRS INITIALIZE SECT      80305450
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0094 1 0997          ADR5  DC    DMIR      ADDRESS DF INTRPT RTN          8030 5460
0095 1 09A1          ADR6  DC    MCTRL     ADDR MPXDM CTRL SECT           8030 5470
0096 1 0079          ADR7  DC    EXIT1     DMIN ABDRT EXIT ADDR           8030 5480
0097 1 09B7          ADR8  DC    CTL1      MCTRL ABDRT EXIT ADRS          8030 5490
0098 0 2002          DM2ID DC    /2002     LDCAL MPDM2 ID                 8030 5500
0099 0 FFFD          NEG3  DC    -3        CDNSTANT NEGETIVE 3            8030 5510
009A 0 07FF          BASE  DC    2047      BASE RELDCATIDN FACTDR         8030 5520
                     *                                   *               8030 5530
                     *           TYPEN I/D LIST          *               8030 5540
                     *                                   *               8030 5550
009B 0 0000          LIST  DC    *-*       LINK/BUSY                      8030 5560
009C 0 0000                DC    0         EXIT TYPE                      8030 5570
0D9D 0 0000                DC    *-*       SYSTEM RESERVED 1              8030 5580
0D9E 0 0000                DC    *-*       SYSTEM RESERVED 2              8030 5590
D09F 0 0000                DC    *-*       SYSTEM RESERVED 3              8030 5600
00A0 0 0000                DC    *-*       SYSTEM RESERVED 4              8030 5610
00A1 0 0000                DC    0         ERRDR PARAMETER                8030 5620
00A2 0 2110                DC    /2110     1053 I/D CONTRDL PARAM         8030 5630
00A3 1 00AD                DC    POATA     OUTPUT AREA ADDRESS            8030 5640
                     *                                                    8030 5650
00A4 1 0EFC          TVECT DC    BGIN      *                              8030 5660
00A5 1 0AB3                DC    STRT      * INTERFACE                    8030 5670
00A6 1 0D11                DC    MEND      *                              8030 5680
0DA7 1 0D9B                DC    LG        *                              8030 5690
00A8 1 0D71                DC    ERR       *    ROUTINE                   8030 5700
0DA9 1 0B20                DC    RQDV      *                              8030 5710
00AA 1 0CDD                DC    RLDV      *      ADDRESS                 8030 5720
                     *                                                    8030 5730
00AB   0002                BSS   2         MPX REQUIREMENT                8030 5740
00AD 0 0017          PDATA DC    23        WORD CDUNT                     8030 5750
                     *                                                    8030 5760
                     *                                                    8030 5770
                     *     1053/1816 OUTPUT CODE TABLE                    8030 5780
                     *                                                    8030 5790
00AE 0 811E          HDG53 DC    /811E     CDDED CR/C                     8030 5800
00AF 0 B29A                DC    /B29A       *    U/S                     8030 5810
00B0 0 9E21                DC    /9E21       *    T/SP                    8030 5820
00B1 0 3676                DC    /3676       *    E/N                     8030 5830
00B2 0 1621                DC    /1621     CDDED  G/SP                    8030 5840
                     *                                                    8030 5850
                     *     MESSG - MPX/MPXDM NOT COMPAT-MPXDM VER 0001    8030 5860
                     *                                                    8030 5870
00B3 0 2172                DC    /2172     SP M                           8030 5880
00B4 0 5696                DC    /5696     P  X                           8030 5890
00B5 0 BC72                DC    /BC72     /  M                           8030 5900
0DB6 0 5696                DC    /5696     P  X                           8030 5910
0DB7 0 3272                DC    /3272     D  M                           8030 5920
00B8 0 2176                DC    /2176     SP N                           8030 5930
D0B9 0 529E                DC    /529E     D  T                           8030 5940
00BA 0 211E                DC    /211E     SP C                           8030 5950
00BB 0 5272                DC    /5272     Q  M                           8030 5960
00BC 0 563E                DC    /563E     P  A                           8030 5970
00BD 0 9E84                DC    /9E84     T  -                           8030 5980
00BE 0 7256                DC    /7256     M  P                           8030 5990
0DBF 0 9632                DC    /9632     X  D                           8030 6000
00C0 0 7221                DC    /7221     M  SP                          8030 6010
00C1 0 B636                DC    /B636     V  E                           8030 6020
00C2 0 6221                DC    /6221     R  SP                          8030 6030
00C3 0 C4C4                DC    /C4C4     0  0                           8030 6040
00C4 0 C4FC                DC    /C4FC     0  1                           8030 6050
                     *                                                    8030 6060
                     *     1443 DUTPUT CDDE TABLES                        8030 6070
                     *                                                    8030 6080
00C5 0 0033          HDG43 DC    /0033     CDDED SP/C                     8030 6090
00C6 0 1412                DC    /1412       *    U/S                     8030 6100
00C7 0 1300                DC    /1300       *    T/SP                    8030 6110
00C8 0 3525                DC    /3700       *    E/N                     8030 6120
00C9 0 3700                DC    /3700     CDDED  G/SP                    8030 6130
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                     *                                                    8030 6140
                     * PACKED 1443/1053 HEXIDECIMAL PRINT CODES           8030 6150
                     *                                                    8030 6160
00CA 0 0021          C4353 DC    /0021     SPACE                          8030 6170
00C8 0 0AC4                DC    /0AC4     0                              8030 6180
00CC 0 01FC                DC    /01FC     1                              8030 6190
00CD 0 02D8                DC    /02D8     2                              8030 6200
00CE 0 03DC                DC    /03DC     3                              8030 6210
00CF 0 04F0                DC    /04F0     4                              8030 6220
00D0 0 05F4                DC    /05F4     5                              8030 6230
00D1 0 06D0                DC    /06D0     6                              8030 6240
00D2 0 07D4                DC    /07D4     7                              8030 6250
00D3 0 08E4                DC    /08E4     8                              8030 6260
00D4 0 09E0                DC    /09E0     9                              8030 6270
00D5 0 313E                DC    /313E     A                              8030 6280
00D6 0 321A                DC    /321A     B                              8030 6290
00D7 0 331E                DC    /331E     C                              8030 6300
00D8 0 3432                DC    /3432     D                              8030 6310
0009 0 3536                DC    /3536     E                              8030 6320
00DA 0 3612                DC    /3612     F                              8030 6330
00DB 0 2084                DC    /2084     MINUS SIGN                     8030 6340
                     *                                                    8030 6350
                     *          D001 MESSAGE STRING                       8030 6360
                     *                                                    8030 6370
00DC 0 0004          LCMSG DC    /0004     LINE NUM8ER-WDRD CDUNT         8030 6380
00DD 0 0000                DC    /0000     HEX/DEC = HEX OUTPUT           8030 6390
00DE 0 D002                DC    /D002     MESSAGE ID                     8030 6400
00DF 0 0000                DC    /0000     MPXDM ORG ADDRESS              8030 6410
00E0 1 0000                DC    MPXDM     DM LOAD ADDRESS                8030 6420
00E1 1 0911                DC    DMPID     DM MAIN LINE ADDRESS           8030 6430
00E2 1 0000                DC    MPXDM     RELOCATION FACTOR              8030 6440
                     *                                                    8030 6450
                     ******************************************           8030 6460
                     *                                        *           8030 6470
0911                       ORG   MPXDM+2321 RELOCATA8LE ORIGIN            8030 6480
                     *                                        *           8030 6490
                     ******************************************           8030 6500
                     *      MPXDM - PROGRAM STATUS TABLE      *           8030 6510
                     ******************************************           8030 6520
                     *                                        *           8030 6530
0911 0 0300          OMPID DC    /0300     PID                            8030 6540
0912 0 0001          RID   DC    /0001     ROUTINE ID                     8030 6550
0913 1 0911          RAD   DC    DMPID     ROUTINE AODRESS                8030 6560
0914 0 0000          SWO   DC    /0000                                    8030 6570
0915 0 0000          SW1   DC    /0000                                    8030 6580
0916 0 0000          SW2   DC    /0000                                    8030 6590
0917 0 0000          SW3   DC    /0000                                    8030 6600
0918 0 0000          IPA   DC    /0000                                    8030 6610
0919 0 0000          LPA   DC    /0000                                    8030 6620
091A 0 0000          EPA   DC    /0000                                    8030 6630
0918 0 0000          MLSCF DC    /0000     MAIN LINE SEQ CONTROL          8030 6640
091C 0 FFFF          TERM  DC    /FFFF     TERMINATOR                     8030 6650
                     ******************************************           8030 6660
                     *              EDIT AREA                 *           8030 6670
                     ******************************************           8030 6680
091D   0077          DMEDT BSS   119       RESERVE EDIT AREA              8030 6690
                     *                                        *           8030 6700
                     *              CONSTANTS                 *           8030 6710
                     *                                        *           8030 6720
0994 0 0001          K1    DC    1         CONSTANT 1                     8030 6730
0995 0 0002          K2    DC    2         DEC 2                          8030 6740
0996 0 000F          K000F OC    /000F     HEX 000F                       8030 6750
                     *                                        *           8030 6760
                     ******************************************           8030 6770
                     *      MPXDM - INTERRUPT ROUTINE         *           8030 6780
                     ******************************************           8030 6790
                     *                                        *           8030 6800
                     *              ** DMIR **                *           8030 6810
```

```
*                                                 *      80306820
*     THIS ROUTINE IS ENTERED WHEN THE            *      80306830
*     DEVICE UNDER TEST CAUSES AN INTERRUPT.      *      80306840
*     THE INTERRUPT WILL FIRST ENTER THE          *      80306850
*     MPX INTERRUPT ROUTINE. MPX WILL XFER        *      80306860
*     TO DMIR VIA THE XFER INSTRUCTION IN         *      80306870
*     THE DEVICE TABLE FOR THE INTERRUPTING       *      80306880
*     DEVICE. DMIR WILL THEN TRANSFER TO THE      *      80306890
*     DFT INTERRUPT SERVICE ROUTINE. THE          *      80306900
*     REVERSE PATH IS TAKEN WHEN INTERRUPT        *      80306910
*     SERVECING HAS BEEN COMPLETED.               *      80306920
*                                                 *      80306930
*     OMIR FUNCTIONS ARE.                         *      80306940
*                                                 *      80306950
*     1.TRANSFER TO DFT INTERRUPT ROUTINE.        *      80306960
*     2.ON DFT RETURN,TEST DFT INTERRUPT SW       *      80306970
*       TO DETERMINE IF THIS WAS THE LAST         *      80306980
*       EXPECTED INTERRUPT FOR THE PRESENT        *      80306990
*       OPERATION.                                *      80307000
*     3.STOP NO RESPONCE TIMEOUT ON LAST INT      *      80307010
*     4.DECREMENT AREA BUSY WORD(MPX ASNGD).      *      80307020
*       ON LAST INTERRUPT.                        *      80307030
*     5.RESTORE MPX DEVICE TABLE INTERRUPT        *      80307040
*       XFER INSTRUCTION ON LAST INTERRUPT.       *      80307050
*     6.CLEAR INTERRUPT CONTROL WORDS ON          *      80307060
*       LAST INTERRUPT                            *      80307070
*     7.EXIT ROUTINE.                             *      80307080
*                                                 *      80307090
*     CALLED ROUTINES.                            *      80307100
*                                                 *      80307110
*         1. DFT INTERRUPT ROUTINE.               *      80307120
*         2. RESTR - RESTORE INTERFACE RTN        *      80307130
*                                                 *      80307140
*     CALLED SUBROUTINES.                         *      80307150
*                                                 *      80307160
*         NONE                                    *      80307170
* POSSIBLE ABORT CONDITIONS.                      *      80307180
*                                                 *      80307190
* NONE.                                           *      80307200
*                                                 *      80307210
* ROUTINE ENTRY    DMIR                           *      80307220
* ROUTINE EXIT     DIRXT                          *      80307230
*                                                 *      80307240
*************************************************       80307250
*                                                 *      80307260
0997 0 4480 FFE4    OMIR  BSI  I  OFTIA     TO OFT INTERRUPT RTN      80307270
0999 0 C480 FFE3          LD   I  DFTIS     FETCH DFT INTRPT SW       80307280
099B 1 4C20 099F          BSC  L  DIRXT,Z   BRANCH IF NOT LAST INT    80307290
*                                                 *      80307300
*     LAST INTERRUPT RECEIVED.STOP TIMER IF       *      80307310
*     IN USE.DECREMENT AREA BUSY.HOUSEKEEP        *      80307320
*     INDICATORS.                                 *      80307330
*                                                 *      80307340
099D 1 4400 003F          BSI  L  RESTR     CALL RESTORE ROUTINE      80307350
*                                                 *      80307360
099F 0 4C80 0074    DIRXT BSC  I  $IMIC     RETURN TO MPX MIC ROUTINE 80307370
*                                                 *      80307380
*************************************************       80307390
*        MPXDM - MONITOR CONTROL ROUTINE          *      80307400
*************************************************       80307410
*                                                 *      80307420
*                  ** MCTRL **                    *      80307430
*                                                 *      80307440
*     THE PURPOSE OF THIS ROUTINE IS TO           *      80307450
*     INPUT THE DIAGNOSTIC FUNCTION TEST          *      80307460
*     AND ITS EDIT,AND TO MONITOR AND CARRY       *      80307470
*     OUT THE OPERATIONS DICTATED BY THE          *      80307480
*     C.E. SWITCHES.                              *      80307490
```



```
*                                                 *      80307500
*     THE CE SWITCH FUNCTIONS ARE                 *      80307510
*                                                 *      80307520
*    I CE SW I  ON/OFF  I     FUNCTION           *      80307530
*----I-------I----------I--------------------*           80307540
*    I   8   I  CHANGE  I READ DFT CNTRL CDS*             80307550
*----I-------I----------I--------------------*           80307560
*    I   9   I  CHANGE  I LOAD NEXT DFT DECK*             80307570
*----I-------I----------I--------------------*           80307580
*    I  10   I    ON    I SET INHIBIT END   *            80307590
*    I       I          I TIME SHARE SWITCH *            80307600
*    I       I   OFF    I CLEAR INHIBIT END *            80307610
*    I       I          I TIME SHARE SWITCH *            80307620
*----I-------I----------I--------------------*           80307630
*    I  11   I    ON    I DE-EXECUTE        *            80307640
*    I       I   OFF    I EXECUTE DFT       *            80307650
*----I-------I----------I--------------------*           80307660
*    I  12   I    ON    I LOOP ON ERROR     *            80307670
*    I       I   OFF    I CONTINUE ON ERROR *            80307680
*----I-------I----------I--------------------*           80307690
*    I  13   I    ON    I BYPASS ERROR PRINT*            80307700
*    I       I   OFF    I ALLOW ERROR PRINT *            80307710
*----I-------I----------I--------------------*           80307720
*    I  14   I    ON    I TERMINATE ON-LINE *            80307730
*    I       I          I OPERATION.        *            80307740
*    I       I   OFF    I NORMAL ON-LINE    *            80307750
*    I       I          I OPERATION.        *            80307760
*----I-------I----------I--------------------*           80307770
*    I  15   I    ON    I ENTER MONITOR     *            80307780
*    I       I          I PAUSE.            *            80307790
*    I       I   OFF    I TERMINATE MONITOR *            80307800
*    I       I          I PAUSE.            *            80307810
*----I-------I----------I--------------------*           80307820
*                                                 *      80307830
*     CALLED ROUTINES                             *      80307840
*                                                 *      80307850
*         1. MPDM1 - DIAG TEST LOADER             *      80307860
*         2. MPDM2 - EDIT CARD LOADER             *      80307870
*         3. MPDM4 - CONTROL CARD LOADER          *      80307880
*         4. EXIT - MONITOR TERMINATION RTN       *      80307890
*                                                 *      80307900
*     CALLED SUBROUTINES                          *      80307910
*                                                 *      80307920
*         1. LDPRT - LOG D001.DFT LOAD MSG        *      80307930
*         2. TSCTL - SET/CLEAR INHIBIT END        *      80307940
*                    TIME SHARE INDICATOR         *      80307950
*         3. CKIO  - CHECK FOR PENDING I/O        *      80307960
*                    OPERATION INTERRUPT.         *      80307970
*         4. MTERM - PREPARE FOR PROG TERM.       *      80307980
*         5. CTLPT - LOG A001.DFT XEQ MSG.        *      80307990
*                                                 *      80308000
* PUSSIBLE ABORT CONDITIONS                       *      80308010
*                                                 *      80308020
* NONE                                            *      80308030
*                                                 *      80308040
* ROUTINE ENTRY    MCTRL & CTL1                   *      80308050
* ROUTINE EXIT     CTLXT+4                        *      80308060
*                                                 *      80308070
*************************************************       80308080
*                                                 *      80308090
09A1 1 C400 0A3C    MCTRL LD   L  LCIO1     FETCH MPDM1 ID            80308100
09A3 0 D400 FFD9          STO  L  LCLIO     SET IN LOCAL CK WORD      80308110
09A5 1 D400 1238          STO  L  ABM2      SAVE IN ABORT MESSAGE     80308120
*                                                 *      80308130
*     INPOT DIAGNOSTIC FUNCTION TEST              *      80308140
*                                                 *      80308150
09A7 1 4400 0F1E          BSI  L  MPDM1     CALL DFT LOADER           80308160
09A9 1 C400 0A3D          LD   L  LCID2     FETCH MPDM2 ID            80308170
```

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09AB 0 D400 FFD9          STO  L  LCLID      SET IN LOCAL CK WORD          80308180
09AD 1 D400 1238          STO  L  ABM2       SAVE IN ABORT MESSAGE         80308190
                     *                                                    80308200
                     *    INPUT DIAG FUNCTION TEST EDIT                   80308210
                     *                                                    80308220
09AF 1 4400 102D          BSI  L  MPDM2      CALL EDIT LOADER              80308230
09B1 1 4400 0A8A          BSI  L  LDPRT      BRNH TO PRNT DFT LUADED MSG   80308240
                     *                                                    80308250
09B3 0 4078               BSI     SWS        GO PRESET CNTRL SWS           80308260
09B4 0 1010               SLA     16         INITIALUZE CONTROL            80308270
09B5 1 D400 0A38          STO  L  CTLCD      *CARD READ SWITCH             80308280
                     *                                                    80308290
09B7 0 10A0          CTL1 SLT     32         CLEAR 'A' AND 'Q'             80308300
09B8 1 0C00 0A36          XIO  L  CESWS      SENSE CE SWITCHES             80308310
09BA 1 E400 0A3A          AND  L  K00FF      SAVE CE SWS ONLY              80308320
09BC 1 D400 0A3F          STO  L  CESAV      SAVE THE SETTING              80308330
09BE 0 18D6               RTE     22         SET SW 10 TO BIT 0            80308340
                     *                                                    80308350
                     *    SET OR CLEAR THE MPX TIME SHARE                 80308360
                     *    LOCK IN SWITCH ACCORDING TO THE                 80308370
                     *    SETTING OF C.E. SWITCH 10.                      80308380
                     *                                                    80308390
09BF 0 6300               LDX  3 0           PRESET TO TURN TSS OFF        80308400
09C0 0 4828               BSC     +Z         SKIP IF CE SW 10 UFF          80308410
09C1 0 6301               LDX  3 1           SET TO TURN TSS ON            80308420
09C2 1 4400 0A61          BSI  L  TSCTL      SET/CLR TIME SHARE LOCK SW    80308430
                     *                                                    80308440
                     *    CK FOR CONTROL CARD READ SW 8                   80308450
                     *                                                    80308460
09C4 0 18D1          CTL3 RTE     17         POSITION SW 8                 80308470
09C5 0 F072               EOR     CTLCD      TEST FOR CHNG OF STATE        80308480
09C6 0 4B0B               BSC     +          SKIP IF RD CTL CD REQST       80308490
09C7 0 700F               MDX     CTL4       NOT CTL CD READ-BRANCH        80308500
09C8 1 7400 1208          MDX  L  A8TID,0    SKIP IF NOT DFT ABORTED       80308510
09CA 0 700C               MDX     CTL4       ELSE 8RANCH                   80308520
                     *                                                    80308530
                     *    READ CONTROL CARDS REQUESTED                    80308540
                     *                                                    80308550
09C8 0 F06C               EOR     CTLCD      COMPLEMENT INDICATUR          80308560
09CC 0 D06B               STO     CTLCD      *TO REFLECT SW CHANGE         80308570
09CD 1 4400 0A4D          BSI  L  CKIO       CALL I/O IN OP CK RTN         80308580
09CF 0 C06E               LD      LCID4      FETCH MPDM4 ID                80308590
09D0 0 D400 FFD9          STO  L  LCLID      SET IN LOCAL CK WORD          80308600
09D2 1 D400 1238          STO  L  ABM2       SAVE IN ABORT MESSAGE         80308610
                     *                                                    80308620
                     *    INPUT DFT CONTROL CARDS                         80308630
                     *                                                    80308640
09D4 1 4400 10D7          BSI  L  MPDM4      CALL CONTROL CD LOADER        80308650
09D6 0 70E0               MDX     CTL1       LOOP TO START CONTROL         80308660
                     *                                                    80308670
                     *    CHECK XEQ/DXEQ DIAG FUNCTION TEST               80308680
                     *                                                    80308690
09D7 0 18CE          CTL4 RTE     14         POSITION XEQ SW 11            80308700
09D8 1 4C10 09DC          BSC  L  CTL5,-     BRANCH IF SW OFF              80308710
                     *                                                    80308720
                     *    DXEQ DFT IF IT IS EXECUTING                     80308730
                     *                                                    80308740
09DA 0 4065               BSI     MTERM      CALL DXEQ ROUTINE             80308750
09DB 0 7015               MDX     CTL6       BRANCH TO TEST SW 15          80308760
                     *                                                    80308770
                     *    XEQ  DFT IF IT 1S NOT EXECUTING                 80308780
                     *                                                    80308790
09DC 0 7400 FFDB     CTL5 MDX  L  XEQSW,0    SKIP IF NOT EXECUTING         80308800
09DE 0 7012               MDX     CTL6       DFT EXECUTING-8RANCH          80308810
09DF 1 7400 1234          MDX  L  DTABT,0    SKP IF NOT DFT A8ORTED        80308820
09E1 0 700F               MDX     CTL6       8RANCH-DFT A8ORTED ON         80308830
09E2 0 6C00 FFDB          STX  L  XEQSW      SET XEQ SWITCH                80308840
09E4 0 6780 FFF2          LDX  I3 DFTID      IX 3 = DFT PST ADDRS          80308850
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09E6 0 6C00 FFFD          STX  L  DFTOP      SET DFT IN OPER IND           80308860
09E8 0 47B0 0007          BSI  I3 7          TO DFT INITIALIZATIUN         80308870
09EA 0 1010               SLA     16         CLEAR DFT IN                  80308880
09EB 0 D400 FFFD          STU  L  DFTOP      *UPERATION INDICATUR          80308890
                     *                                                    80308900
                     *    LOG MESSAGE A001 - DFT XEQ                      80308910
                     *                                                    80308920
09ED 1 4400 0A74          BSI  L  CTLPT      8RANCH TO PRINT               80308930
09EF 0 0001               DC      1          XEQ CONSTANT                  80308940
09F0 0 7035               MDX     CTLXT      BRANCH TO POLL                80308950
                     *                                                    80308960
                     *         CHECK PAUSE SWITCH 15                      80308970
                     *                                                    80308980
09F1 0 10A0          CTL6 SLT     32         CLEAR @A@ AND @Q@             80308990
09F2 0 0843               XIO     CESWS      SENSE CE SWITCHES             80309000
09F3 0 E046               AND     K00FF      REMOVE SNS/PGM SWITCHES       80309010
09F4 0 18D1               RTE     17         POSITION SW 15                80309020
09F5 0 4810               BSC     -          SKIP IF SWITCH ON             80309030
09F6 0 7008               MDX     CTL8       SW OFF 8RANCH                 80309040
                     *                                                    80309050
                     *         ENTER MONITOR PAUSE                        80309060
                     *                                                    80309070
09F7 0 C043               LD      PAUSE      FETCH PAUSE SWITCH            80309080
09F8 1 4C20 09F1          8SC  L  CTL6,Z     BRN IF ALREADY IN PAUSE       80309090
09FA 0 C400 FFE9          LD   L  ETSST      FETCH TIME SHARE STATUS       80309100
09FC 0 D400 FFE8          STO  L  ETSSV      SAVE IT                       80309110
09FE 0 6300               LDX  3 0           SET TO UNLOCK TIME SHARE      80309120
09FF 0 4061               BSI     TSCTL      8RANCH TO UNLOCK T.S.         80309130
0A00 0 683A          CTL7 STX     PAUSE      SET PAUSE INDICATOR           80309140
0A01 0 70EF               MOX     CTL6       PAUSE LOUP 8RANCH             80309150
                     *                                                    80309160
                     *    TERMINATE EXISTING PAUSE LOOP                   80309170
                     *                                                    80309180
0A02 0 C038          CTL8 LD      PAUSE      FETCH PAUSE IND               80309190
0A03 0 4818               BSC     +-         SKIP IF ON                    80309200
0A04 0 700F               MDX     CTL9A      NOT IN PAUSE 8RANCH           80309210
0A05 0 0830          CTL8A XIO    CESWS      SENSE CE SWS                  80309220
0A06 0 E033               AND     K00FF      SAVE CE SWS ONLY              80309230
0A07 1 4C18 0A0D          8SC  L  CTL9,+-    8RANCH IF SWS ZERU            80309240
0A09 0 F035               EUR     CESAV      CK IF SAME AS BEFORE          80309250
0A0A 0 1801               SRA     1          EXCEPT FOR SW 15              80309260
0A08 1 4C20 0A05          8SC  L  CTL8A,Z    8RANCH IF NOT THE SAME        80309270
0A0D 0 6780 FFE8     CTL9 LDX  I3 ETSSV      SET TO RESTURE TS STATUS      80309280
0A0F 0 4051               8SI     TSCTL      BRANCH TU LOCKIN T.S.         80309290
0A10 0 401B               BSI     SWS        GO PRESET CNTRL SWS           80309300
0A11 0 1010               SLA     16                                       80309310
0A12 0 D028               STO     PAUSE      CLR PAUSE INDICATUR           80309320
0A13 0 7012               MDX     CTLXT      8RANCH TU POLL                80309330
                     *                                                    80309340
                     *    TEST TERMINATE ON LINE OPERATION SW 14*         80309350
                     *                                                    80309360
0A14 0 18C1          CTL9A RTE    1          POSITIUN TERM SW              80309370
0A15 0 4810               8SC     -          SKIP IF SW IS ON              80309380
0A16 0 7005               MOX     CTL11      SW OFF BRANCH                 80309390
0A17 0 4028               BSI     MTERM      CALL DE-EXECUTE RTN           80309400
0A18 0 6300               LDX  3 0           SET TU UNLOCK TIME SHARE      80309410
0A19 0 4047               BSI     TSCTL      BRANCH TO UNLOCK T.S.         80309420
0A1A 1 4C00 0AA2     CTL10 BSC  L  EXIT      BRANCH TO MPXDM TERM RTN      80309430
                     *                                                    80309440
                     *    TEST LOAD NEXT PROGRAM SWITCH 9                 80309450
                     *                                                    80309460
0A1C 0 18C5          CTL11 RTE    5          POSITION SWITCH               80309470
0A1D 0 180F               SRA     15         * BIT 9                       80309480
0A1E 0 F01A               EOR     NXTPG      TEST FOR CHG OF STATE         80309490
0A1F 0 4808               BSC     +          SKIP IF LOAD PROG RQST        80309500
0A20 0 7005               MDX     CTLXT      BRANCH TO POLL                80309510
0A21 0 F017               EOR     NXTPG      COMPLEMENT INDICATUR          80309520
0A22 0 D016               STO     NXTPG      *TO REFLECT THE SW CHNG       80309530
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0A23 0 401C              BSI     MTERM       DXEQ PRESENT PROGRAM        80 30 9540
0A24 1 4C00 09A1         BSC  L  MCTRL       GO LOAD NEXT PROGRAM        80 30 9550
                         *                                               80 30 9560
                         *     SET RETURN AND EXIT TO START              * 80 30 9570
                         *                                               * 80 30 9580
0A26 1 6700 09B7  CTLXT  LDX  L3 CTL1        SET MLSCF RETURN            80 30 9590
0A28 1 6F00 091B         STX  L3 MLSCF       *                           80 30 9600
                         *                                               80 30 9610
0A2A 0 4C80 FFF6         BSC  I  START       TO POLL                     80 30 9620
                         *                                               80 30 9630
0A2C 0 0000       SWS    OC      *-*         RETURN ADDRESS              80 30 9640
                         *                                               80 30 9650
0A2D 0 0808              XIO     CESWS       SENSE CE SWITCHES           80 30 9660
0A2E 0 E00B              AND     K00FF       SAVE CE SWS ONLY            80 30 9670
0A2F 0 1887              SRT     7           POSITION SW 8               80 30 9680
0A30 0 D007              STO     CTLCO       SET CTLCO = SW 8            80 30 9690
0A31 0 1010              SLA     16          CLEAR 'A' REG               80 30 9700
0A32 0 1081              SLT     1           POSITION SW 9               80 30 9710
0A33 0 D005              STO     NXTPG       SET NXTPG = SW 9            80 30 9720
                         *                                               80 30 9730
0A34 1 4C80 0A2C  SWSXT  BSC  I  SWS         RETURN TO USER              80 30 9740
                         *                                               * 80 30 9750
                         *          CONSTANTS                            * 80 30 9760
                         *                                               * 80 30 9770
0A36   0000              BSS  E  0                                       80 30 9780
0A36 0 0000       CESWS  DC       0           IOC WORD TO SENSE           80 30 9790
0A37 0 0760              OC      /0760       *CE SWITCHES                80 30 9800
                         *                                               80 30 9810
0A38 0 0000       CTLCD  DC       0           READ CONTROL CARD IND       80 30 9820
0A39 0 0000       NXTPG  OC       0           LOAD NEXT PROGRAM IND       80 30 9830
0A3A 0 00FF       K00FF  DC       /00FF       HEX 00FF                    80 30 9840
0A3B 0 0000       PAUSE  DC       0           PAUSE IN PROGRESS IND       80 30 9850
0A3C 0 1001       LCID1  OC       /1001       MPDM1 ID                    80 30 9860
0A3D 0 2002       LCID2  DC       /2002       MPDM2 ID                    80 30 9870
0A3E 0 4004       LCID4  DC       /4004       MPDM4 ID                    80 30 9880
0A3F 0 0000       CESAV  DC       *-*         CE SWS SETTING SAVE         80 30 9890
                         *                                               * 80 30 9900
                         *-----------------------------------------------* 80 30 9910
                         *        MCTRL - MTERM SUBROUTINE               * 80 30 9920
                         *-----------------------------------------------* 80 30 9930
                         *                                               * 80 30 9940
                         *     THIS SUBROUTINE IS ENTERED WHENEVER       * 80 30 9950
                         *     THE OPERATOR SPECIFIES THE FUNCTIONS      * 80 30 9960
                         *     OF DE-EXECUTE DFT,TERMINATE ON-LINE       * 80 30 9970
                         *     OPERATIONS OR LOAD NEXT PROGRAM. IF A     * 80 30 9980
                         *     DFT IS EXECUTING WHEN THE SUBROUTINE      * 80 30 9990
                         *     IS ENTERED,THEN MTERM WILL CALL THE       * 80 310000
                         *     ROUTINES NECESSARY TO PROPERLY DXEQ       * 80 3100 10
                         *     THE DFT.                                  * 80 3100 20
                         *                                               * 80 3100 30
                         *                  CALLING SEQUENCE             * 80 3100 40
                         *                                               * 80 3100 50
                         *                  BSI   MTERM                  * 80 3100 60
                         *                                               * 80 3100 70
                         *     CALLED ROUTINES                           * 80 3100 80
                         *                                               * 80 3100 90
                         *         1. END   - MPXDM END ROUTINE          * 80 310 100
                         *                                               * 80 310 110
                         *     CALLED SUBROUTINES                        * 80 310 120
                         *                                               * 80 310 130
                         *         1. CKIO  - PENDING INTRP CK SUBRTN     * 80 310 140
                         *                                               * 80 310 150
                         * POSSIBLE ABORT CONDITIONS                     * 80 310 160
                         *                                               * 80 310 170
                         * NONE                                          * 80 310 180
                         *                                               * 80 310 190
                         * SUBROUTINE ENTRY    MTERM                     * 80 310 200
                         * SUBROUTINE EXIT     TRMXT                     * 80 310 210
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                         *                                               * 80 310 220
                         *-----------------------------------------------* 80 310 230
                         *                                               * 80 310 240
0A40 0 0000       MTERM  DC       *-*         RETURN ADDRESS              80 310 250
                         *                                               80 310 260
0A41 0 7400 FF0B         MDX  L  XEQSW,0     SKIP IF PROG NOT XEQ        80 310 270
0A43 0 7001              MOX     *+1                                     80 310 280
0A44 0 7006              MDX     TRMXT       NO XEQ-EXIT ROUTINE         80 310 290
0A45 0 4007              BSI     CKIO        BRANCH TO CK IF I/O OPER    80 310 300
0A46 0 1010              SLA     16          CLEAR DFT                   80 310 310
0A47 0 0400 FFDB         STO  L  XEQSW       * EXECUTION SWITCH          80 310 320
0A49 0 4C80 FFF7         BSC  I  END         BRANCH TO END ROUTINE       80 310 330
                         *                                               80 310 340
0A4B 1 4C80 0A40  TRMXT  BSC  I  MTERM       RETURN TO USER              80 310 350
                         *                                               * 80 310 360
                         *-----------------------------------------------* 80 310 370
                         *        MCTRL - CKIO SUBROUTINE                * 80 310 380
                         *-----------------------------------------------* 80 310 390
                         *                                               * 80 310 400
                         *     THIS SUBRDUTINE IS ENTERED PRIOR TO       * 80 310 410
                         *     ANY DFT TERMINATION OR SUSPENSION.CKIO    * 80 310 420
                         *     WILL PREVENT THE TERMINATION OR           * 80 310 430
                         *     SUSPENSION OF THE DFT UNTIL ALL           * 80 310 440
                         *     PENDING I/O OPERATIONS HAVE BEEN          * 80 310 450
                         *     COMPLETED,EITHER THROUGH AN I/O INTER-    * 80 310 460
                         *     RUPT OR A NO RESPONCE TIME-OUT.           * 80 310 470
                         *     A DFT IS FREE TO BE TERMINATED WHEN       * 80 310 480
                         *     ALL OF THE FOLLOWING CONTROL WORDS ARE    * 80 310 490
                         *     ZERO. NTTIM,NLINT,8YICR,TIMON AND         * 80 310 500
                         *     OTIVS.                                    * 80 310 510
                         *     CKIO WILL SET UP A LOOP BETWEEN ITSELF    * 80 310 520
                         *     AND THE POLLING ROUTINE INTIL THESE       * 80 310 530
                         *     WORDS ARE ZERO.                           * 80 310 540
                         *                                               * 80 310 550
                         *                  CALLING SEQUENCE             * 80 310 560
                         *                                               * 80 310 570
                         *                  BSI   CKIO                   * 80 310 580
                         *                                               * 80 310 590
                         *     CALLED ROUTINES                           * 80 310 600
                         *                                               * 80 310 610
                         *         1. START - MPXOM POLLING ROUTINE      * 80 310 620
                         *                                               * 80 310 630
                         *     CALLED SUBROUTINES                        * 80 310 640
                         *                                               * 80 310 650
                         *         NONE                                  * 80 310 660
                         *                                               * 80 310 670
                         * POSSIBLE ABORT CONDITIONS                     * 80 310 680
                         *                                               * 80 310 690
                         * NONE                                          * 80 310 700
                         *                                               * 80 310 710
                         * SUBROUTINE ENTRY    CKIO                      * 80 310 720
                         * SUBROUTINE EXIT     CIOXT & CKIO2+4           * 80 310 730
                         *                                               * 80 310 740
                         *-----------------------------------------------* 80 310 750
                         *                                               * 80 310 760
0A4D 0 0000       CKIO   DC       *-*         RETURN ADDRESS              80 310 770
                         *                                               80 310 780
0A4E 0 63FB              LOX     3 -5        SET CHECK INDEX             80 310 790
0A4F 0 C700 FFEF  CKIO1  LD   L3 NTTIM+5     FETCH I/O CONTROL IND       80 310 800
0A51 0 4820              BSC     Z           SKIP IF WURD = 0            80 310 810
0A52 0 7008              MDX     CKIO2       NON ZERO BRANCH             80 310 820
0A53 0 7301              MDX     3 1         SKIP IF ALL WORDS CKD       80 310 830
0A54 0 70FA              MOX     CKIO1       CONTINUE CK                 80 310 840
0A55 1 6700 09B7         LDX  L3 CTL1        RESTORE MLSCF               80 310 850
0A57 1 6F00 091B         STX  L3 MLSCF       * ENTRY                     80 310 860
0A59 1 4C80 0A4D  CIOXT  BSC  I  CKIO        RETURN TO USER              80 310 870
                         *                                               * 80 310 880
                         *     LOOP THROUGH START TIL I/O NOT BUSY       * 80 310 890
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                        *                                       *  80310900
0A5B 1 6700 0A4E    CKIO2 LDX  L3 CKIO+1     SET UP MLSCF TO      80310910
0A5D 1 6F00 091B          STX  L3 MLSCF      *RETURN TO CKIO      80310920
0A5F 0 4C80 FFF6          BSC  I  START      BRANCH TO START RTN  80310930
                        *                                       *  80310940
                        *---------------------------------------*  80310950
                        *       MCTRL - TSCTL SUBROUTINE        *  80310960
                        *---------------------------------------*  80310970
                        *                                       *  80310980
                        *     THIS SUBROUTINE IS USED TO SET AND *  80310990
                        *     CLEAR THE MPX TIME SHARE LOCK-IN  *  80311000
                        *     INDICATOR.IX 3 CONTAINS THE VALUE TO *  80311010
                        *     WHICH THE SWITCH IS SET. 0=OFF,1=ON. *  80311020
                        *                                       *  80311030
                        *     THE INDICATOR IS SET WHEN THE TIME *  80311040
                        *     SHARE LOCK-IN SWITCH(CE#10)IS ON AND *  80311050
                        *     MPXDM IS NOT IN A PAUSE.          *  80311060
                        *     THE INDICATOR IS CLEARED WHEN THE TIME* 80311070
                        *     SHARE LOCK-IN SWITCH(CE#10)IS OFF,WHEN* 80311080
                        *     MPXOM ENTERS A REQUESTED PAUSE(CE#15),* 80311090
                        *     WHEN TERMINATION OF ON-LINE OPERATIONS* 80311100
                        *     IS REQUESTED(CE#14)OR WHEN AN ABORT *  80311110
                        *     EXIT IS PERFORMED.                *  80311120
                        *                                       *  80311130
                        *                 CALLING SEQUENCE      *  80311140
                        *                                       *  80311150
                        *                 BSI   TSCTL           *  80311160
                        *                                       *  80311170
                        *     CALLED ROUTINES                   *  80311180
                        *                                       *  80311190
                        *         NONE                          *  80311200
                        *                                       *  80311210
                        *     CALLED SUBROUTINES                *  80311220
                        *                                       *  80311230
                        *         NONE                          *  80311240
                        *                                       *  80311250
                        * POSSIBLE ABORT CONDITIONS             *  80311260
                        *                                       *  80311270
                        * NONE                                  *  80311280
                        *                                       *  80311290
                        * SUBROUTINE ENTRY    TSCTL             *  80311300
                        * SUBROUTINE EXIT     TSCXT             *  80311310
                        *                                       *  80311320
                        *---------------------------------------*  80311330
                        *                                       *  80311340
0A61 0 0000         TSCTL DC       *-*        RETURN ADDRESS       80311350
0A62 0 D010               STO      A1         SAVE A REG           80311360
                        *                                          80311370
0A63 0 C400 00B0          LD   L   $TSLK      SAVE TIME SHARE      80311380
0A65 0 6F00 FFE9          STX  L3  ETSST      SET TIME SHARE STATS WRD 80311390
0A67 0 6F00 00B0          STX  L3  $TSLK      SET MPX TIME SHARE SW 80311400
0A69 0 7300               MDX   3  0          SKIP IF CLEAR TS LUCK SW 80311410
0A6A 0 7005               MDX      TSCXT      ELSE EXIT            80311420
0A6B 1 4C18 0A70          BSC  L   TSCXT,+-   EXIT IF TS NOT LOCKED 80311430
0A6D 0 63FF               LDX   3  -1         SET INDEX = -1       80311440
0A6E 0 6F00 0077          STX  L3  $TSST      SET MPX T/S BUSY = -1 80311450
                        *                                          80311460
0A70 0 C002         TSCXT LO       A1         RESTORE A REG        80311470
0A71 1 4C80 0A61          BSC  I   TSCTL      RETURN TO USER       80311480
0A73 0 0000         A1    DC       *-*        A REG SAVED          80311490
                        *                                       *  80311500
                        *---------------------------------------*  80311510
                        *       MCTRL - CTLPT SUBROUTINE        *  80311520
                        *---------------------------------------*  80311530
                        *                                       *  80311540
                        *     CTLPT IS USED TO SETUP THE DFT    *  80311550
                        *     EXECUTE/DE-EXECUTE STATUS MESSAGE,A001* 80311560
                        *     AND THEN CALL ON THE PRINT ROUTINE TO * 80311570
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                        *     OUTPUT THAT MESSAGE.              *  80311580
                        *                                       *  80311590
                        *                 CALLING SEQUENCE      *  80311600
                        *                                       *  80311610
                        *                 8SI   CTLPT           *  80311620
                        *                 DC    /000X 1=XEQ,0=DXEQ *  80311630
                        *                                       *  80311640
                        *     CALLED ROUTINES                   *  80311650
                        *                                       *  80311660
                        *         1. LOG   - MPXDM PRINT ROUTINE *  80311670
                        *                                       *  80311680
                        *     CALLED SUBROUTINES                *  80311690
                        *                                       *  80311700
                        *         NONE                          *  80311710
                        *                                       *  80311720
                        * POSSIBLE ABORT CONDITIONS             *  80311730
                        *                                       *  80311740
                        * NONE                                  *  80311750
                        *                                       *  80311760
                        * SUBROUTINE ENTRY    CTLPT             *  80311770
                        * SUBROUTINE EXIT     CTPXT             *  80311780
                        *                                       *  80311790
                        *---------------------------------------*  80311800
                        *                                       *  80311810
0A74 0 0000         CTLPT DC       *-*        RETURN ADDRESS       80311820
                        *                                          80311830
0A75 1 C480 0A74          LD   I   CTLPT      FETCH XEQ/DXEQ CONSTANT 80311840
0A77 0 0010               STO      MSG1A      SET IN MESSAGE STRING 80311850
0A78 0 C480 FFF2          LD   I   DFTID      FETCH PROG ID        80311860
0A7A 0 1808               SRA      8          POSITION             80311870
0A7B 0 000D               STO      MSG1B      SET IN MESSAGE STRING 80311880
0A7C 0 4480 FFF8    CTLP1 8SI  I   LOG        CALL LOG ROUTINE     80311890
0A7E 1 0A85               DC       MSGA1      MESSAGE ADDRESS      80311900
0A7F 1 0A7C               DC       CTLP1      BUSY RETURN          80311910
0A80 0 0000               DC       0000       TERMINATION TYPE     80311920
0A81 1 7401 0A74          MDX  L   CTLPT,1     ADJUST RETURN        80311930
                        *                                          80311940
0A83 1 4C80 0A74    CTPXT 8SC  I   CTLPT                           80311950
                        *                                       *  80311960
                        *              A001  MESSAGE STRING     *  80311970
                        *                                       *  80311980
0A85 0 0002         MSGA1 DC       /0002      LINE NUMBER/WORD CUUNT 80311990
0A86 0 0000               DC       /0000      HEX/OEC = HEX OUTPUT 80312000
0A87 0 A001               DC       /A001      MESSAGE ID           80312010
0A88 0 0000         MSG1A OC       0          0000=DXEQ,0001=XEQ   80312020
0A89 0 0000         MSG1B DC       0          00XX=DFT ID          80312030
                        *                                       *  80312040
                        *---------------------------------------*  80312050
                        *       MCTRL - LDPRT SUBROUTINE        *  80312060
                        *---------------------------------------*  80312070
                        *                                       *  80312080
                        *     LDPRT IS USED TO BUILD DATA MESSAGE *  80312090
                        *     D001,DFT LOAD MESSAGE,AND THEN CALL UN* 80312100
                        *     THE MPXDM PRINT ROUTINE TO OUTPUT THAT* 80312110
                        *     MESSAGE. THIS SUBROUTINE INSERTS THE *  80312120
                        *     FOLLOWING INFORMATION INTO THE MESSAGE* 80312130
                        *     STRING.DFT PID,LOAD ADDRESS AND   *  80312140
                        *     RELOCATION FACTOR.                *  80312150
                        *                                       *  80312160
                        *                 CALLING SEQUENCE      *  80312170
                        *                                       *  80312180
                        *                 8SI   LDPRT           *  80312190
                        *                                       *  80312200
                        *     CALLED ROUTINES                   *  80312210
                        *                                       *  80312220
                        *         1. LOG   - MPXDM PRINT ROUTINE *  80312230
                        *                                       *  80312240
                        *     CALLED SUBROUTINES                *  80312250
```

```
                        *                                       *       80312260
                        *          NONE                         *       80312270
                        *                                       *       80312280
                        * POSSIBLE ABORT CONDITIONS              *       80312290
                        *                                       *       80312300
                        * NONE                                  *       80312310
                        *                                       *       80312320
                        * SUBROUTINE ENTRY    LOPRT             *       80312330
                        * SUBROUTINE EXIT     LDPXT             *       80312340
                        *                                       *       80312350
                        *---------------------------------------*       80312360
                        *                                       *       80312370
0A8A 0 0000             LDPRT DC      *-*       RETURN ADDRESS          80312380
                        *                                               80312390
0A88 0 C480 FFF2              LD    I DFTIO     FETCH PIO OF LOADED OFT 80312400
0A8D 0 0010                   STD     LDM1      STORE IN MESSAGE STRING 80312410
0A8E 0 C400 FFF2              LD    L DFTID     FETCH ACTIAL LOAD ADDRS 80312420
0A90 0 D00F                   STD     LDM2      STORE IN MESSAGE STRING 80312430
0A91 1 C400 0FCE              LO    L RELFC     FETCH RELOCATION FACTOR 80312440
0A93 0 D00D                   STD     LDM3      STORE IN MESSAGE STRING 80312450
0A94 0 4480 FFF8        LDPR1 BSI   I LOG       CALL LOG ROUTINE        80312460
0A96 1 0A98                   DC      LDMSG     MESSAGE STRING ADDRESS  80312470
0A97 1 0A94                   DC      LDPR1     BUSY RETURN ADDRESS     80312480
0A98 0 0000                   DC      /0000     TERMINATION TYPE        80312490
                        *                                               80312500
0A99 1 4C80 0A8A        LDPXT BSC   I LDPRT     RETURN TO USER          80312510
                        *                                       *       80312520
                        *           MESSAGE STRING              *       80312530
                        *                                       *       80312540
0A9B 0 0004             LDMSG DC      /0004     WORD COUNT              80312550
0A9C 0 0000                   DC      /0000     HEX/DEC SW # HEX        80312560
0A9D 0 D001                   DC      /0001     MESSAGE ID              80312570
0A9E 0 0000             LDM1  DC      *-*       DFT PID                 80312580
0A9F 0 07FF                   DC      2047      ASSM LOAD ADDRESS       80312590
0AA0 0 0000             LDM2  DC      *-*       ACTUAL LOAD ADDRESS     80312600
0AA1 0 0000             LDM3  DC      *-*       RELOCATION FACTOR       80312610
                        *                                       *       80312620
                        *****************************************       80312630
                        *       MPXDM - TERMINATION ROUTINE     *       80312640
                        *****************************************       80312650
                        *                                       *       80312660
                        *               ** EXIT **              *       80312670
                        *                                       *       80312680
                        *     THIS ROUTINE IS CALLED BY THE CONTROL *   80312690
                        *     ROUTINE WHEN C.E.SW 14 IS TURNED ON,  *   80312700
                        *     AND VIA THE ABORT XFER VECTOR BY THE  *   80312710
                        *     ABORT ROUTINE WHEN AN UNRECOVERABLE   *   80312720
                        *     ERROR IS DETECTED. THE ROUTINE PRINTS *   80312730
                        *     MESSAGE C002,AND WHEN ALL C.E.SWITCHES*   80312740
                        *     ARE TURNED OFF,CALLS THE MPX EXIT     *   80312750
                        *     ROUTINE TO TERMINATE ON LINE DIAG     *   80312760
                        *     OPERATION.                            *   80312770
                        *                                           *   80312780
                        *                 CALLING SEQUENCE          *   80312790
                        *                                           *   80312800
                        *                 BSC L EXIT                *   80312810
                        *                                           *   80312820
                        *     CALLED ROUTINES                       *   80312830
                        *                                           *   80312840
                        *         1. LOG - MPXOM PRINT ROUTINE      *   80312850
                        *         2. LDMON - MPX D.P.MON LOAD RTN   *   80312860
                        *                                           *   80312870
                        *     CALLED SUBROUTINES                    *   80312880
                        *                                           *   80312890
                        *         NONE                              *   80312900
                        *                                           *   80312910
                        * POSSIBLE ABORT CONDITIONS               *       80312920
                        *                                       *       80312930
```



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                        * NONE                                  *       80312940
                        *                                       *       80312950
                        * ROUTINE ENTRY    EXIT                  *       80312960
                        * ROUTINE EXIT     MONXT                 *       80312970
                        *                                       *       80312980
                        *****************************************       80312990
                        *                                       *       80313000
0AA2 0 4480 FFF8        EXIT  BSI   I LOG       CALL LOG RTN-MSG C002   80313010
0AA4 1 0AB0                   DC      MSGC2     MESSAGE ADDRESS         80313020
0AA5 1 0AA2                   DC      EXIT      BUSY RETURN             80313030
0AA6 0 0000                   DC      0000      TERMINATION TYPE        80313040
0AA7 1 0C00 0A36        EXITA XIO   L CESWS      SENSE S/P AND CE SWS    80313050
0AA9 0 1008                   SLA     8         SAVE CE SWS ONLY        80313060
0AAA 1 4C20 0AA7              BSC   L EXITA,Z   BRANCH IF ANY SWITCH ON 80313070
0AAC 0 6C00 FFFE              STX   L MPXOP     SET MPX IN OP IND       80313080
0AAE 0 4480 00B6        MONXT BSI   I $EXIT     ELSE CALL MPX EXIT RTN  80313090
                        *                                               80313100
                        *           MESSAGE STRING - C002               80313110
                        *                                               80313120
0AB0 0 0000             MSGC2 DC      0         MODIFIER WORD COUNT     80313130
0AB1 0 0000                   DC      0         HEX/DEC SW              80313140
0AB2 0 C002                   DC      /C002     MESSAGE ID              80313150
                        *                                               80313160
                        *****************************************       80313170
                        *       MPXDM - START ROUTINE           *       80313180
                        *****************************************       80313190
                        *                                       *       80313200
                        *               ** STRT **              *       80313210
                        *                                       *       80313220
                        *    THE START ROUTINE IS USED TO ALLOCATE *    80313230
                        *    ALTERNATE RUNNING TIME TO MPXOM AND   *    80313240
                        *    THE DFT. CONTROL IS PASSED TO THE     *    80313250
                        *    PROPER PROGRAM ACCORDING TO THE POLL  *    80313260
                        *    SWITCH SETTING. THE POLL SWITCH IS    *    80313270
                        *    COMPLEMENTED EACH TIME STRT IS ENTERED*    80313280
                        *                                          *    80313290
                        *    WHEN MPXDM IS POLLED,CONTROL IS PASSED*    80313300
                        *    TO THE MCTRL ROUTINE VIA THE MPXDM    *    80313310
                        *    MLSCF ENTRY. MCTRL WILL THEN PERFORM  *    80313320
                        *    THOSE OPERATION SPECIFIED BY THE      *    80313330
                        *    OPERATOR IN THE CE SWITCHES.          *    80313340
                        *                                          *    80313350
                        *    WHEN THE DFT IS POLLED,1 OF 3 OPERA-  *    80313360
                        *    TIONS WILL OCCUR.                     *    80313370
                        *                                          *    80313380
                        *    1.PENDING DFT I/O INTERRUPT.          *    80313390
                        *    STRT WILL INITIALIZE FOR RECEIPT OF   *    80313400
                        *    NO RESPONCE TIME OUT INTERRUPTS. STRT *    80313410
                        *    THEN RETURNS TO THE DFT AT THE ADDRS  *    80313420
                        *    SPECIFIED IN ITS MLSCF FIELD          *    80313430
                        *                                          *    80313440
                        *    2. LOG RETURN ADDRESS PENDING.        *    80313450
                        *    IF THE DFT ENTERED STRT FOLLOWING A   *    80313460
                        *    LOG CALL WHICH SPECIFIED AN END OF    *    80313470
                        *    MESSAGE RETURN ADDRESS, THEN STRT WILL*    80313480
                        *    BRANCH TO THAT ADDRESS.               *    80313490
                        *                                          *    80313500
                        *    3. UNCONDITIONAL STRT CALL            *    80313510
                        *    WHEN THE DFT CALLS ON STRT WITH       *    80313520
                        *    NEITHER A PENDING I/O INTERRUPT OR    *    80313530
                        *    LOG RETURN ADDRESS,THEN STRT WILL     *    80313540
                        *    SEARCH THE DFT MLSCF TABLE AND BRANCH *    80313550
                        *    TO THE LOCATION SPECIFIED BY THE 1ST  *    80313560
                        *    NON ZERO ENTRY. EACH TIME A BRANCH IS *    80313570
                        *    TAKEN,THAT ENTRY IS CLEARED FROM THE  *    80313580
                        *    MLSCF TABLE                           *    80313590
                        *                                          *    80313600
                        *                CALLING SEQUENCE          *    80313610
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                        *                                               *      80313620
                        *                 8SC I START                   *      80313630
                        *                 C(START) = STRT               *      80313640
                        *                                               *      80313650
                        *     CALLED ROUTINES                           *      80313660
                        *                                               *      80313670
                        *     SPECIFIED IN MPXDM OR DFT MLSCF TA8LE     *      80313680
                        *                                               *      80313690
                        *     CALLED SU8ROUTINES                        *      80313700
                        *                                               *      80313710
                        *     SPECIFIED IN MPXDM OR DFT MLSCF TA8LE     *      80313720
                        *                                               *      80313730
                        * POSSI8LE A8ORT CONDITIONS                     *      80313740
                        *                                               *      80313750
                        * NONE                                          *      80313760
                        *                                               *      80313770
                        * ROUTINE ENTRY    STRT                         *      80313780
                        * ROUTINE EXIT     STRXT                        *      80313790
                        *                                               *      80313800
                        *************************************************      80313810
                        *                                               *      80313820
0A83 0 6943             STRT  STX   1 STRTG+1     SAVE INDEX REG 1            80313830
0A84 0 6A44                   STX   2 STRTG+3     SAVE INDEX REG 2            80313840
0A85 0 6500 FFD2              LDX  L1 EDITA       SET MPXDM COMN INDEX        80313850
0A87 0 1010                   SLA    16           CLEAR DFT IN                80313860
0A88 0 D128                   STO   1 DFTOP-EDITA  *OPERATION INDICATOR        80313870
0A89 0 C11E                   LD    1 STATS-EDITA  SET START                   80313880
0A8A 0 E859                   OR      K0200        *ROUTINE STATUS             80313890
0A88 0 D11E                   STO   1 STATS-EDITA    *8IT - 8IT 6             80313900
0A8C 0 627F                   LDX   2 CON          SET MPX FIXED AREA REF      80313910
0A8D 0 0A83                   XIO   2 $MK1-CON     MASK LEVELS 0 - 13          80313920
0A8E 0 0A85                   XIO   2 $MK2-CON     MASK LEVELS 14 - 23         80313930
0A8F 0 7400 FFE8              MDX  L  NLINT,0      SKIP IF NO INTRPT EXPCTED   80313940
0AC1 0 703F                   MDX     STRTF        8RANCH IF INTRPT EXPCTED    80313950
0AC2 0 0AAF             STRTA XIO   2 $UMK1-CON     UNMASK LEVELS 0 - 13        80313960
0AC3 0 0A81                   XIO   2 $UMK2-CON     UNMASK LEVELS 14 - 23       80313970
0AC4 0 C04D                   LD      POLL         FETCH POLL SWITCH           80313980
0AC5 0 F04F                   EOR     ONE          COMPLEMENT                  80313990
0AC6 0 D048                   STO     POLL         SAVE THE UPDATE             80314000
0AC7 0 C120                   LD    1 DFTID-EDITA  FETCH DFT PST ADDRS         80314010
0AC8 1 7400 0812              MDX  L  POLL,0       SKIP IF DFT POLL ACTIVE     80314020
0ACA 0 7001                   MDX     *+1          ELSE 8RANCH                 80314030
0AC8 0 7004                   MDX     STRT8-1      CONTINUE 8RANCH             80314040
0ACC 0 7400 FFDC              MDX  L  LOGAD,0      DFT LOG PENDING             80314050
0ACE 0 70F5                   MDX     STRTA+2      YES - 8RANCH                80314060
0ACF 0 C121                   LD    1 DM8GN-EDITA  FETCH MPXDM PST ADDRS       80314070
0AD0 0 D108                   STO   1 ACTIV-EDITA  SET ACTIVE PID WORD         80314080
0AD1 0 6780 FFDA        STRT8 LDX  I3 ACTIV        SET IX # ACTIVE PST ADDR    80314090
0AD3 0 730A                   MDX   3 10           IX # MLSCF ADDRESS          80314100
0AD4 1 7400 0812              MDX  L  POLL,0       SKIP IF DFT POLL ACTIVE     80314110
0AD6 0 7009                   MDX     STRTC        DM POLL 8RANCH              80314120
0AD7 0 C109                   LD    1 XEQSW-EDITA  FETCH DFT XEQ SWITCH        80314130
0AD8 0 4818                   BSC     +-           SKIP IF DFT XEQING          80314140
0AD9 0 70E8                   MDX     STRTA        DFT NOT OPERATING-8RANCH    80314150
0ADA 0 7400 FFE8              MDX  L  NLINT,0      SKIP IF NO INTRPT EXPCTD    80314160
0ADC 0 7003                   MDX     STRTC        EXPCT INTERRUPT - 8RANCH    80314170
0ADD 0 7400 FFDC              MDX  L  LOGAD,0      SKIP IF LOG TERM 0000       80314180
0ADF 0 700A                   MDX     STRTD        PRINT RETURN 8RANCH         80314190
                        *                                                     80314200
                        *     SEARCH MLSCF TA8LE FOR ENTRIES                  80314210
                        *                                                     80314220
0AE0 0 C300             STRTC LD    3 0            FETCH MLSCF ENTRY           80314230
0AE1 1 F400 091C              EOR  L  TERM         CK FOR TERMINATOR           80314240
0AE3 1 4C18 0AC2              8SC  L  STRTA,+-     8R IF TERMINATOR            80314250
0AE5 0 C300                   LD    3 0            FETCH MLSCF ENTRY           80314260
0AE6 1 4C20 0AED              8SC  L  STRTE,Z      8RANCH IF ADDRESS           80314270
0AE8 0 7301                   MDX   3 1            INCR MLSCF INDEX            80314280
0AE9 0 70F6                   MDX     STRTC        8RANCH TO CK NEXT ENTRY     80314290
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0AEA 0 6700 FFDC        STRTD LDX   L3 LOGAD       SET IX = ADRS LOGAD         80314300
0AEC 0 C300                   LD     3 0           FETCH PRINT RTRN ADRS       80314310
0AED 0 D012             STRTE STO      STRXT+1     STORE ADDRESS IN EXIT       80314320
0AEE 0 1010                   SLA      16          CLEAR MLSCF/PRINT           80314330
0AEF 0 D300                   STO    3 0           *  ENTRY                    80314340
                        *                                                     80314350
                        *     MAIN LINE TIME OUT - DELAY 450US                80314360
                        *                                                     80314370
0AF0 0 635A                   LDX    3 90          SET DELAY COUNT             80314380
0AF1 0 73FF                   MDX    3 -1          * 450US DELAY               80314390
0AF2 0 70FE                   MDX      *-2         *   LOOP                    80314400
0AF3 0 C11E                   LD     1 STATS-EDITA CLEAR START                 80314410
0AF4 0 F01F                   EOR      K0200       *ROUTINE STATUS             80314420
0AF5 0 D11E                   STO    1 STATS-EDITA   *BIT - 8IT 6              80314430
0AF6 0 6500 0000        STRTG LDX   L1 *-*          RESTORE INDEX REG 1         80314440
0AF8 0 6600 0000              LDX   L2 *-*          RESTORE INUEX REG 2         80314450
0AFA 1 7400 0B12              MDX   L  POLL,0       SKIP IF DFT POLL            80314460
0AFC 0 7002                   MDX      STRXT                                    80314470
0AFD 0 6C00 FFFD              STX   L  DFTOP        SET DFT IN UP INDICATOR     80314480
                        *                                                     80314490
0AFF 0 4C00 0000        STRXT BSC   L  *-*          BRANCH TO USER              80314500
                        *                                                     80314510
                        *     THIS SECTION IS ENTERED WHEN A DFT    *         80314520
                        *     INTERRUPT IS EXPECTED.                *         80314530
                        *                                           *         80314540
0801 0 7400 FFED        STRTF MDX   L  TIMUN,0      SKIP IF TIMER NOT ON        80314550
0803 0 70BE                   MDX      STRTA       TIMER RUNNING - BRANCH      80314560
                        *                                           *         80314570
                        *     INCREMENT AREA 8USY IF REQUIRED       *         80314580
                        *                                           *         80314590
0804 0 7400 FFEC              MDX   L  8YICR,0      SKIP IF 8USY NOT INCRMNTD   80314600
0806 0 7005                   MDX      STRTH       8USY INCREMENTED - 8RANCH   80314610
0807 0 C110                   LD     1 ARBSY-EDITA FETCH AREA 8USY ADDRESS     80314620
0808 0 D001                   STO      *+1         SET IN INCR INSTR           80314630
0809 0 7401 0000              MDX   L  *-*,1       INCR AREA 8USY INDICATOR    80314640
0808 0 D11A                   STO    1 8YICR-EDITA  SET 8USY INCRMNTD IND       80314650
                        *                                           *         80314660
                        *     START NO RESPONCE TIME OUT            *         80314670
                        *                                           *         80314680
080C 0 C10C             STRTH LD     1 TIMCT-EDITA  FETCH DIAG TIMER COUNT     80314690
080D 0 D118                   STO    1 NTTIM-EDITA  TIME OUT INDICATOR          80314700
                        *                                                     80314710
080E 0 C004                   LD       TORTN       SET TMOUT RTN ADDRS IN      80314720
080F 0 D233                   STO   X2 $C8AS-CON   *$CBAS TO START TIMEOUT     80314730
                        *                                                     80314740
0810 0 D118                   STO    1 TIMON-EDITA  SET TIMER RUNNING IND       80314750
0811 0 7080                   MDX      STRTA       8RANCH TO POLL              80314760
                        *                                           *         80314770
                        *                CONSTANTS                  *         80314780
                        *                                           *         80314790
0812 0 0001             POLL  DC       1           PULL SWITCH                 80314800
0813 1 0816             TORTN DC       TMUUT       TMOUT RTN ADDRESS           80314810
0814 0 0200             K0200 DC       /0200       CONSTANT HEX 0200           80314820
0815 0 0001             ONE   DC       1           CONSTANT 1                  80314830
                        *                                           *         80314840
                        *************************************************     80314850
                        *        MPXDM - TIME-OUT ROUTINE           *         80314860
                        *************************************************     80314870
                        *                                           *         80314880
                        *                ** TMOUT **                *         80314890
                        *                                           *         80314900
                        *     THIS ROUTINE IS USED TO 'TIME' DFT I/O*         80314910
                        *     OPERATIONS. IT IS CALLED 8Y THE MPX   *         80314920
                        *     NO RESPONCE ROUTINE EACH TIME A 2 SEC *         80314930
                        *     RESPONCE PERIOD HAS ELAPSED. IF AN I/O*         80314940
                        *     INTERRUPT HAS NOT 8EEN RECEIVED 8EFORE*         80314950
                        *     THE 3RD CALL(6 SEC PERIOD) THEN TMOUT *         80314960
                        *     ASSUMES A LOST INTERRUPT CONDITION AND*         80314970
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                *     CALLS ON THE RESTR ROUTINE TO RESTORE *      80314980
                *     THE MPX/MPXOM INTERFACE.              *      80314990
                *                                           *      80315000
                *                  CALLING SEQUENCE         *      80315010
                *                                           *      80315020
                *                  BSI I $CBAS              *      80315030
                *                                           *      80315040
                *     CALLEO RDUTINES                       *      80315050
                *                                           *      80315060
                *         1. RESTR - INTRPT CONTROL RESTORE *      8D315D70
                *                                           *      80315080
                *     CALLEO SU8ROUTINES                    *      80315090
                *                                           *      803151D0
                *         NDNE                              *      80315110
                *                                           *      80315120
                * POSSI8LE ABORT CDNDITIONS                 *      80315130
                *                                           *      80315140
                * NDNE                                      *      80315150
                *                                           *      80315160
                * ROUTINE ENTRY    TMOUT                    *      8D315170
                * ROUTINE EXIT     TIMXT+6                  *      80315180
                *                                           *      80315190
                *********************************************      80315200
                *                                           *      80315210
D816 D 0D00     TMOUT OC      *-*         RETURN ADDRESS          80315220
                *                                                   80315230
0817 0 7401 FFEA        MOX   L   NTTIM,1     SKIP IF 2NO ENTRY     80315240
0819 0 7004             MOX       TIMXT       NDT TIME OUT BRANCH   80315250
D81A 1 440D D03F        8SI   L   RESTR       CALL RESTORE ROUTINE  80315260
D81C 0 6C00 FFE1        STX   L   TOINO       SET TIMEO OUT INOICATUR 80315270
                *                                                  80315280
D81E 1 4C80 0816 TIMXT 8SC   I    TMOUT       RETURN TO MPX         80315290
                *                                           *      80315300
                *********************************************      80315310
                *        MPXOM - REQUEST OEVICE RDUTINE     *      80315320
                *********************************************      80315330
                *                                           *      80315340
                *                ** RQOV **                 *      80315350
                *                                           *      80315360
                *     ROUTINE RQOV IS USED TU VERIFY THAT   *      80315370
                *     ALL REQUIRED CONOITIONS FOR ON-LINE   *      80315380
                *     OPERATIUN ARE MET 8EFORE ASSIGNING    *      80315390
                *     THE REQUESTEO OEVICE TO THE OFT FUR   *      80315400
                *     OPERATION. THE FUNCTIONS PERFORMEO 8Y *      80315410
                *     THIS ROUTINE ARE AS FDLLOWS.          *      80315420
                *                                           *      80315430
                *     1.VERIFY THAT THE REQUESTED DEVICE    *      80315440
                *       (DOEF) HAS BEEN EOITED IN MPXDM.    *      80315450
                *     2.VERIFY THAT THE REQUESTEO OEVICE IS *      80315460
                *       NOT ALREAOY ASSIGNED TU THE DFT.    *      80315470
                *     3.VERIFY THAT THE SAME OEVICE IS RE-  *      80315480
                *       QUESTEO ON EACH REQDV CALL(SAME AREA*      80315490
                *       CODE ANO MOOIFIER).                 *      80315500
                *       A.IN THE CASE OF MULTIPLE DEVICES   *      80315510
                *         WITH THE SAME AREA CODE 8UT OIFFE-*      80315520
                *         RENT MOOIFIERS,A NEW DEVICE MAY 8E*      80315530
                *         REQUESTEO FOR TEST UNLY AFTER A   *      80315540
                *         OXEQ PRDGRAM FUNCTION HAS 8EEN    *      80315550
                *         PERFDRMED.                        *      80315560
                *     4.VERIFY THAT THE AREA COOE EOITEO IN *      80315570
                *       MPXOM FOR THE REQUESTED ODEF IS A   *      80315580
                *       LEGAL OEVICE FOR THE REQUESTING OFT.*      80315590
                *     5.VERIFY THAT THE REQUESTEO OEVICE IS *      80315600
                *       DEFINED IN THE MPX SYSTEM.          *      80315610
                *     6.VERIFY THAT THE INTERRUPT LEVEL     *      80315620
                *       SPECIFIED IN THE ODEF IS LEGAL.     *      80315630
                *     7.VERIFY THAT THE INTERRUPT LEVEL FUR *      80315640
                *       THE REQUESTEO DEVICE IS UNMASKEO.   *      80315650
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                *     8.VERIFY THAT THE REQUESTED OEVICE IS *      80315660
                *       OFF LINE IF IT CANNOT 8E SHAREO.    *      80315670
                *                                           *      80315680
                *   IF ITEMS 1 THRUUGH 8 A8OVE ARE FOUND    *      80315690
                *   TO 8E CORRECT,THEN RQOV PERFURMS THE    *      80315700
                *   FOLLOWING UPERATIONS.                   *      80315710
                *                                           *      80315720
                *   1.ASSIGNS THE DEVICE TO THE OFT 8Y      *      80315730
                *     SETTING 80 IN THE OOEF,ANO 8Y         *      80315740
                *     STORING THE REQUESTED DEVICE AREA     *      80315750
                *     COOE AT THE OFT DVA ADDRESS.          *      80315760
                *   2.SET THE INTERRUPT XFER VECTOR,IN THE  *      80315770
                *     MPX OEVICE TA8LE FOR THE REQUESTED    *      80315780
                *     OEVICE,TO POINT TO MPXDM.             *      80315790
                *   3.INCREMENT THE MPX VARIA8LE CURE       *      80315800
                *     I/O 8USY INDICATUR.                   *      80315810
                *   4.RETURN TO THE OFT.                    *      80315820
                *                                           *      80315830
                *              CALLING SEQUENCE             *      80315840
                *                                           *      80315850
                *              BSI I REQOV                  *      80315860
                *              OC     AOORS OF 8USY         *      80315870
                *              OC     AOORS OF OOEF         *      80315880
                *              DC     ADORS UF OVA          *      80315890
                *              DC     ADORS UF TERM         *      80315900
                *              C(REQOV) = RQOV              *      80315910
                *                                           *      80315920
                *   CALLEO ROUTINES                         *      80315930
                *                                           *      80315940
                *       1. IUSET - MPX SET AREA 8USY RTN    *      80315950
                *       2. A8URT - MPXDM ERRUR A8ORT RTN    *      80315960
                *       3. RLDV - RELEASE DEVICE RTN        *      80315970
                *                                           *      80315980
                *   CALLEO SU8RUUTINES                      *      80315990
                *                                           *      80316000
                *       1. CHDCK - CK SHARED CHANNEL DEV.   *      80316010
                *                                           *      80316020
                * POSSI8LE ABORT CONDITIUNS                 *      80316030
                *                                           *      80316040
                *  CODE  *            CONDITION             *      80316050
                *                                           *      80316060
                *  E010  *  REQUESTEO DOEF NOT OEFINED IN   *      80316070
                *        *     MPXDM EDIT.                 *      80316080
                *  E011  *  DEVICE IS ALREAOY ASSIGNEO TU   *      80316090
                *        *     THE DFT.                    *      80316100
                *  E012  *  A DIFFERENT OEVICE WAS REQSTED  *      80316110
                *        *     WITHOUT D-EXECUTING THE PRESENT *    80316120
                *        *     UPERATIUN.                  *      80316130
                *  E013  *  THE AREA CODE EDITED FOR THE    *      80316140
                *        *     REQUESTEO DOEF IS NOT A LEGAL *      80316150
                *        *     DEVICE FOR THE REQUESTING DFT. *     80316160
                *  E014  *  REQUESTED DEVICE IS NUT OEFINED *      80316170
                *        *     IN THE MPX SYSTEM           *      80316180
                *  E015  *  AN ILLEGAL INTERRUPT LEVEL WAS  *      80316190
                *        *     SPECIFIED IN THE ODEF.      *      80316200
                *  E016  *  INTERRUPT LEVEL FOR THE REQUESTU*      80316210
                *        *     OEVICE IS MASKEO.           *      80316220
                *  E017  *  REQUESTEO DEVICE IS UN-LINE.    *      80316230
                *  E018  *  AN ILLEGAL CHANNEL WAS SPECIFIED*      80316240
                *        *     IN THE DDEF.                *      80316250
                *                                           *      80316260
                *  ROUTINE ENTRY   RQOV                     *      80316270
                * ROUTINE EXIT     RQEXT+6                  *      80316280
                *                                           *      80316290
                *********************************************      80316300
                *                                           *      80316310
082D 0 0000     RQOV  OC      *-*         ENTRY PUINT             80316320
                *                                                  80316330
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0B21 1 6000 0C3E          STX  L1 RQEXT+1    SAVE IX 1                    80316340
0B23 1 6E00 0C40          STX  L2 RQEXT+3    SAVE IX 2                    80316350
0B25 0 6500 FFD2          LDX  L1 EDITA      SET MPXDM HCCA INDEX         80316360
0B27 1 6600 1233          LDX  L2 EXTAD      SET ABORT MESSAGE INDEX      8031637D
0B29 0 1010               SLA    16          CLEAR OFT IN                 80316380
0B2A 0 012B               STO    1 OFTOP-EDITA *OPERATION INDICATOR       80316390
0B2B 0 C11E               LD     1 STATS-EDITA SET INTERFACE              80316400
0B2C 1 EC00 0C45          OR   L K8000        * STATUS WORD               80316410
0B2E 0 D11E               STO    1 STATS-EDITA  * BIT 0                   80316420
0B2F 1 6780 0B20          LDX  I3 RQDV        IX3 = ADDRS CALL STRING      80316430
0B31 0 C780 0001          LD   I3 1           FETCH CALL ODEF              80316440
0B33 0 D205               STO    2 ABM2-EXTAD  SAVE IN ABORT MESSAGE       80316450
0B34 0 7400 FFE6          MDX  L ETPTR,0      SKIP IF 1ST REQUEST          80316460
0B36 0 7017               MDX    RQDV0        NOT 1ST REQUEST-BRANCH       80316470
0B37 0 65B0 FFE5          LDX  I1 ETADR       IX1 = MPXDM EDIT TBL ADRS    80316480
0B39 0 C101          RQDVA LD     1 1         FETCH ODEF FROM TABLE        80316490
0B3A 1 F400 091C           EOR  L TERM        CK FOR TERMINATOR            B0316500
0B3C 1 4C20 0B42           BSC  L RQOVB,Z     BR IF NOT TERMINATOR         80316510
                      *                                                    8031652D
0B3E 0 4480 FFE7           BSI  I ABORT       ABORT EXIT                   80316530
0B40 0 E010                DC     /E010       MIO-UNDEFINED DDEF           B0316540
0B41 0 0001                DC     1           WORD COUNT                   B0316550
                      *                                                    80316560
0B42 0 C101          RQDVB LD     1 1         FETCH ODEF                   80316570
0B43 0 F7B0 0001           EOR  I3 1          CK IF TBL DDEF=CALL DDEF     80316580
0B45 0 1804                SRA    4           REMOVE CHANNEL CHARACTER     80316590
0B46 1 4C20 0B4C           BSC  L RQOVC,Z     BRANCH IF NOT THE SAME       80316600
0B48 0 7101                MDX    1 1         DOEFS CMPR.ADJUST IX         80316610
0B49 1 6000 0C49           STX  L1 TBPTR      SAVE DOEF ADDRESS            80316620
0B4B 0 7004                MDX    RQOV0&2     CONTINUE BRANCH              80316630
0B4C 0 7102          RQDVC MDX    1 2         INCR SEARCH IX               8031664D
0B40 0 70EB                MOX    RQDVA       CONTINUE SEARCH              8D31665D
0B4E 0 65B0 FFE6     RQOVD LDX  I1 ETPTR      IX1=DM DOEF ADDRESS          80316660
0B50 0 C100                LD     1 0         FETCH PREVIOUS DDEF          B0316670
0B51 0 D205                STO    2 ABM2-EXTAD  SAVE IN ABORT MESSAGE       80316680
0B52 0 C101                LD     1 1         FETCH AREA CODE              B0316690
0B53 0 D206                STO    2 ABM3-EXTAD  SAVE IN ABORT MESSAGE       80316700
0B54 0 C780 0001           LD   I3 1          FETCH CALL OOEF              80316710
0B56 0 D207                STD    2 ABM4-EXTAD  SAVE IN ABDRT MESSAGE       80316720
0B57 0 4810                BSC    -           SKIP IF DEV ALREADY RQSTD    8D316730
0B5B 0 700F                MOX    RQDVF       NOT REQUESTED-BRANCH         B0316740
                      *                                    *               B0316750
                      *    DEVICE ALREADY REQUESTED.RELEASE *              80316760
                      *    AND ABORT.                      *               80316770
                      *                                    *               80316780
0B59 0 C301                LD     3 1         FETCH DOEF ADDRESS           B0316790
0B5A 0 D004                STO    RQDVE       SET IN RELEASE CALL          80316800
0B5B 1 6C00 003E           STX  L ENDSW       SET END SWITCH               80316B10
0B5D 1 4400 0CDD           BSI  L RLOV        CALL RELEASE DEV RTN         B0316B20
0B5F 0 0000          RQOVE DC     *-*         DOEF ADDRESS                 80316B30
0B60 1 091C                DC     TERM        TERMINATOR ADDRESS           80316B40
0B61 0 1010                SLA    16          * CLEAR                      B0316B50
0B62 1 D400 003E           STO  L ENDSW       *    END SWITCH              B0316860
                      *                                                    B0316870
0B64 0 4480 FFE7           BSI  1 ABORT       ABORT EXIT                   BD3168B0
0B66 0 E011                OC     /E011       MIO-DEVICE SAAIGNED          80316B90
0B67 0 0003                OC     3           WORD COUNT                   8031690D
                      *                                                    80316910
0B68 0 F100          RQOVF EDR    1 0         CK IF ODEF SAME AS LAST      80316920
0B69 0 1B04                SRA    4           REMOVE CHANNEL BITS          80316930
0B6A 1 4C18 0B70           BSC  L RQOVG,+-    BRANCH IF ODEF SAME          80316940
                      *                                    *               80316950
                      *    MULTIPLE DEVICES REQUESTED-ABDRT *              80316960
                      *                                    *               80316970
0B6C 0 44B0 FFE7           BSI  1 ABORT       ABDRT EXIT                   803169B0
0B6E 0 E012                DC     /E012       MID-MULTIPLE REQUESTS        80316990
0B6F 0 0003                OC     3           WORD COUNT                   80317000
                      *                                    *               B0317010
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                      *    DDEF OK. VERIFY CORRECT AREA CODE    *          80317020
                      *                                         *          80317030
0B70 0 C4B0 FFF2      RQDVG LD   I DFTID      FETCH PROG ID                80317040
0B72 0 1808                 SRA    8          RIGHT JUSTIFY                B0317050
0B73 0 D001                 STO    *+1                                     B0317060
0B74 0 6600 0000            LDX  L2 *-*        IX2=ADJUSTED PID             80317070
0B76 1 C600 0C64            LO   L2 ACTAT      FETCH TABLE ADDRESS          80317080
0B78 0 D001                 STD    *+1                                     80317090
0B79 0 6600 0000            LDX  L2 *-*        IX2=AC TABLE ADDRESS         80317100
0B7B 1 4C20 0B85            BSC  L RQDVH,Z     BRANCH IF DEFINED PID        80317110
0B7D 0 C480 FFF2            LD   I DFTID       FETCH PRDG PID               80317120
0B7F 1 D400 123B            STD  L ABM2        SAVE FOR POSSIBLE ERRDR      80317130
                      *                                                    B0317140
0B81 0 4480 FFE7            BSI  I A8ORT       CALL ERROR ABDRT RTN         80317150
0B83 0 E048                 DC     /E048       ERR CODE-UNDIFINED PID       8D317160
0B84 0 0001                 DC     1           WORD COUNT                   80317170
                      *                                                    B0317180
0BB5 0 C200           RQDVH LD     2 0         FETCH AREA COOE              B0317190
0BB6 1 B400 091C            CMP  L TERM        CK IF TERMINATUR             80317200
0BB8 0 1000                 NOP                * NDT                        B0317210
0BB9 0 7004                 MOX    RQOVI       *    TERMINATOR              80317220
                      *                                         *          80317230
                      *    ILLEGAL AREA COOE. ABORT             *          80317240
                      *                                         *          80317250
0B8A 0 44B0 FFE7            8SI  I ABORT       ABORT EXIT                   80317260
0BBC 0 E013                 OC     /E013       MID-ILLEGAL AREA CODE        80317270
0BBD 0 0002                 DC     2           WORD COUNT                   80317280
                      *                                                    80317290
0B8E 0 B101           RQOVI CMP    1 1         CK IF AC EDITED              80317300
0B8F 0 1000                 NOP                * NUT CORRECT                B0317310
0B90 0 7001                 MOX    *+1         *    AREA CODE               80317320
0B91 0 7002                 MDX    RQDVJ       AC FOUND-BRANCH              80317330
0B92 0 7202                 MOX    2 2         INCR TABLE INDEX             8D317340
0B93 0 70F1                 MDX    RQDVH       CONTINUE SEARCH              80317350
0B94 0 7201           RQDVJ MDX    2 1         ADJUST IX 2                  80317360
0B95 0 C200                 LO     2 0         FETCH MPX FIXED AREA ADRS    80317370
0B96 0 1001                 SLA    1           CLEAR POSSIBLE SIGN BIT      80317380
0B97 0 1801                 SRA    1           RESTORE POSITION             80317390
0B9B 0 DD2B                 STD    L1&I        SAVE FOR LDX                 80317400
                      *                                                    80317410
0B99 1 F400 0CD9            EOR  L D2790&1     TEST IF ADDR FOR 2790        80317420
0B9B 1 4C20 0BC3            BNZ    L1          BRANCH IF NO                 80317430
                      *                                                    8D317440
                      *   SET-UP CONTROLS FOR 2790 REQUEST                 80317450
                      *                                                    B0317460
0B9D 0 C400 0053            LO   L $2790       FETCH $2790                  80317470
0B9F 1 4C18 08B2            BZ     SETUP       BRANCH IF IOCR NOT IN CORE   B0317480
                      *                                                    80317490
0BA1 0 C200                 LD     2 0         FETCH AC TABLE $ADDRESS      80317500
0BA2 0 1B0F                 SRA    15          SET SIGN BIT TO BIT 15       B0317510
0BA3 1 8400 0995            A    L K2          ADD DVT DISPLACEMENT         B0317520
0BA5 0 8400 0053            A    L $2790       ADD COMM TBL ADDRESS         B0317530
0BA7 0 0001                 STO    *&1         PLACE IN LDX                 80317540
0BA8 0 6680 0000            LOX  I2 *-*        XR2 = DEVICE TBL ADDR        B0317550
0BAA 0 D2F7                 STO    2 -9        FIX MPX SCREW-UP.            B0317560
0BAB 0 C2F6                 LD     2 -10       FETCH LOOP CONTROL WORD      80317570
0BAC 1 4C20 0C06            BNZ    L3          GO ABORT IF ACTIVE           80317580
0BAE 0 7211                 MDX    2 &17       ALIGN DVT POINTER            B0317590
0BAF 0 6E0D FFD3            STX  L2 DTADR      SAVE DEVICE TBL ADDR         80317600
                      *                                                    80317610
0BB1 0 7058                 B      RQOVQ       CONTINUE                     80317620
                      *                                                    80317630
                      *   SET-UP DUMMY COMM AREA IF $2790=0                80317640
                      *                                                    B0317650
0BB2 0 0C00 0032      SETUP XIO  L $MK1         MASK SYSTEM                  80317660
0BB4 0 0C00 0034            XIO  L $MK2        *                            80317670
                      *                                                    80317680
0B86 1 6600 0C4C            LDX  L2 OMOVT      FETCH DUMMY TBL ADDRESS      80317690
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0BB8 0 6E00 0053          STX  L2 $2790      SET $2790 TO POINT TD IT   80317700
                     *                                                  80317710
0BBA 1 6600 0C5E          LDX  L2 DMDVT&11&7 ALIGN XR2 FOR DVT PTR      80317720
0BBC 0 6E00 FFD3          STX  L2 DTADR      SAVE DVT POINTER           80317730
0BBE 0 0C00 002E          XIO  L  $UMK1      UNMASK SYSTEM              80317740
0BC0 0 0C00 0030          XIO  L  $UMK2      *                          80317750
0BC2 0 7047               B       RQDVQ      CONTINUE                   80317760
                     *                                                  80317770
0BC3 0 6600 0000     L1   LDX  L2 *-*        SET XR2 TO $2790           80317780
0BC5 1 6E00 123A          STX  L2 ABM4       SAVE IN ABORT MSG          80317790
0BC7 0 C200               LD     2 0         FETCH MPX DEVICE TBL ADRS  80317800
0BC8 1 D400 123B          STO  L  ABM5       SAVE IN ABORT MESSAGE      80317810
0BCA 0 4820               BSC     Z          SKIP IF ADDRESS = 0000     80317820
0BCB 0 7004               MDX     RQDVK      ADDRESS SPECIFIED-BRANCH   80317830
                     *                                          *       80317840
                     *    DEVICE REQUESTED NOT DEFINED IN       *       80317850
                     *    MPX SYSTEM.                           *       80317860
                     *                                          *       80317870
0BCC 0 4480 FFE7          BSI  I  ABORT      ABORT EXIT                 80317880
0BCE 0 E014               DC      /E014      MID-UNDEFINED DEVICE       80317890
0BCF 0 0004               DC      4          WORD CDUNT                 80317900
                     *                                                  80317910
0BD0 0 D001          RQDVK STO       *+1                               80317920
0BD1 0 6600 0000          LDX  L2 *-*        IX2= DEVICE TABLE ADRS     80317930
0BD3 0 720E               MDX     2 14       ADJUST IX                  80317940
0BD4 0 6E00 FFD3          STX  L2 DTADR      SAVE DEV TBL ADDRESS       80317950
                     *                                          *       80317960
                     *    VERIFY THAT INTERRUPT LEVEL FOR THIS  *       80317970
                     *    DEVICE IS LEGAL AND UNMASKED.         *       80317980
                     *                                          *       80317990
0BD6 0 C780 0001          LO   I3 1          FETCH CALL DDEF            80318000
0BD8 0 18B8               SRT     8          POSITIDN IL-SAVE ILSW,CHN  80318010
0BD9 1 B400 0C46          CMP  L  K23        CK FDR LEGAL LEVEL         80318020
0BDB 0 7002               MDX     RQDVL      LEVEL TDD LARGE  GT        80318030
0BDC 0 7005               MDX     RQDVM      * LEVEL          LT        80318040
0BDD 0 700A               MDX     RQDVN      *   DK BRANCH    EQ        80318050
                     *                                                  80318060
0BDE 0 4480 FFE7     RQDVL BSI  I  ABORT      ABORT EXIT                 80318070
0BE0 0 E015               DC      /E015      MID-ILLEGAL INTRPT LEVEL   80318080
0BE1 0 0002               DC      2          WORD COUNT                 80318090
                     *                                                  80318100
0BE2 1 B400 0C47     RQDVM CMP  L  K13        CK 1ST/2ND INTRP GROUP     80318110
0BE4 0 7003               MDX     RQDVN      2ND GROUP          GT      80318120
0BE5 0 1000               NDP                1ST GROUP          LT      80318130
0BE6 0 6100               LDX     1 0        SET IX 1ST INT GROUP       80318140
0BE7 0 7001               MDX     *+1                                   80318150
0BE8 0 6102          RQDVN LDX     1 2        SET IX 2ND INT GROUP       80318160
0BE9 0 D003               STO     *+3        SAVE INTERRUPT LEVEL       80318170
0BEA 0 C500 002E          LD   L1 $UMK1      FETCH PRDPER SYS MASK      80318180
0BEC 0 6500 0000          LDX  L1 *-*        SET IX=CALL INTRP LVL      80318190
0BEE 0 1100               SLA     1 0        POSITION MASK BIT          80318200
0BEF 0 4810               BSC     -          SKIP IF MASK BIT ON        80318210
0BF0 0 700C               MDX     RQDVP      LEVEL UNMASKED-BRANCH      80318220
                     *                                          *       80318230
                     *    INTERRUPT LEVEL FOR REQUESTED DEVICE  *       80318240
                     *    IS MASKED. ABDRT PRDGRAM.             *       80318250
                     *                                          *       80318260
0BF1 0 C400 002E          LD   L  $UMK1      FETCH MASK REG 1           80318270
0BF3 1 D400 1239          STO  L  ABM3       SAVE IN ABORT MESSAGE      80318280
0BF5 0 C400 0030          LD   L  $UMK2      FETCH MASK REG 2           80318290
0BF7 1 D400 123A          STO  L  ABM4       SAVE IN ABDRT MESSAGE      80318300
0BF9 0 4480 FFE7          BSI  I  ABORT      ABORT EXIT                 80318310
0BFB 0 E016               DC      /E016      MID-INTRPT LEVEL MASKED    80318320
0BFC 0 0003               DC      3          WORD CDUNT                 80318330
                     *                                          *       80318340
                     *    VERIFY REQUESTED DEVICE IS OFF LINE   *       80318350
                     *                                          *       80318360
0BFD 0 C2F8          RQDVP LD   X2 DVONF      FETCH ON/OFF INDICATDR     80318370
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0BFE 0 D400 FFD7          STO  L  DNOFF      SAVE DN-OFF STATUS          80318380
0C00 0 4818               BSC     +-         SKIP IF DEV ON LINE        80318390
0C01 0 7008               MDX     RQDVQ      DFF LINE - BRANCH          80318400
0C02 0 C400 FFE0          LD   L  DFTCW      FETCH DFT COMPAT WDRD      80318410
0C04 1 4C28 0C0A          BSC  L  RQOVQ,+Z   BRANCH IF SHARING DK       80318420
                     *                                          *       80318430
                     *    DEVICE DN LINE. ABDRT PRDGRAM.        *       80318440
                     *                                          *       80318450
0C06 0 4480 FFE7     L3   BSI  I  ABDRT      BRANCH TD ABORT            80318460
0C08 0 E017               DC      /E017      MID-DEVICE ON LINE         80318470
0C09 0 0002               DC      2          WDRD COUNT                 80318480
                     *                                                  80318490
0C0A 0 7400 FFE6     RQDVQ MDX  L  ETPTR,0    SKIP IF 1ST REQUEST        80318500
0C0C 0 7003               MDX     RQOVT      NDT 1ST REQUEST BRANCH     80318510
0C0D 0 C03B               LD      TBPTR      FETCH DDEF POINTER         80318520
0C0E 0 D400 FFE6          STD  L  ETPTR      SET IN HIGH CORE AREA      80318530
0C10 0 6580 FFE6     RQDVT LDX  I1 ETPTR      IX1 = ADDRS OF AREA CODE   80318540
0C12 0 C101               LD     1 1         FETCH AREA CODE            80318550
0C13 0 D780 0002          STD  I3 2          SET IN DFT DVA             80318560
0C15 0 6500 FFD2          LOX  L1 EDITA      HCCA POINTER               80318570
0C17 0 C780 0001          LD   I3 1          FETCH DFT DOEF             80318580
0C19 0 E82B               DR      K8000      SET ON APPRDVED BIT        80318590
0C1A 0 D780 0001          STO  I3 1          REPLACE IN DFT             80318600
0C1C 0 C302               LO      3 2        FETCH DVA ADDRESS          80318610
0C1D 1 8400 0994          A    L  K1         BUILD ISS ADDRESS          80318620
0C1F 0 D112               STO     1 DFTIA-EDITA  SAVE IN COMM AREA      80318630
0C20 1 9400 0995          S    L  K2         BUILD INT SW ADDRESS       80318640
0C22 0 D111               STO     1 OFTIS-EDITA  SAVE IN COMM AREA      80318650
0C23 0 C480 FFE3          LO   I  OFTIS      FETCH OFT INTRPT SW        80318660
0C25 1 4C18 0C31          BSC  L  RQDVW-1,&- BRNCH IF NO INTRPT EXPCTD  80318670
0C27 0 7401 FFEB          MDX  L  NLINT,1    SET NDT LAST INT SW        80318680
0C29 0 0C00 0032          XIO  L  $MK1       MASK LEVELS 0 - 13         80318690
0C2B 0 0C00 0034          XIO  L  $MK2       MASK LEVELS 14 - 23        80318700
0C20 0 C2F5               LD   X2 DVISS      FETCH OT XFER VECTOR       80318710
0C2E 0 D11C               STO     1 DTIVS-EDITA  SAVE IN CDMM AREA      80318720
0C2F 0 C12A               LO      1 OMISS-EDITA  FETCH DM XFER VECT     80318730
0C30 0 D2F5               STO  X2 OVISS      STORE IN DEV TABLE         80318740
0C31 0 7303               MDX     3 3        ADJ CALL STRING IX         80318750
0C32 0 C780 0000     RQDVW LO   I3 0          CHECK FOR                  80318760
0C34 1 F400 091C          EDR  L  TERM       * CALL STRING TERM         80318770
0C36 1 4C18 0C3A          BSC  L  RQDVY,+-   BRANCH IF TERM FOUND       80318780
0C38 0 7301               MDX     3 1                                   80318790
0C39 0 70F8               MDX     RQDVW                                 80318800
0C3A 0 C11E          RQOVY LD     1 STATS-EDITA CLEAR                   80318810
0C3B 0 F009               EOR     K8000      *STATUS                    80318820
0C3C 0 D11E               STO     1 STATS-EDITA  * WORD BIT 0           80318830
                     *                                                  80318840
0C3D 0 6500 0000     RQEXT LDX  L1 0          RESTORE IX1                80318850
0C3F 0 6600 0000          LDX  L2 0          RESTORE IX2                80318860
0C41 0 6C00 FFFD          STX  L  DFTDP      SET DFT IN OP IND          80318870
0C43 0 4F00 0001          BSC  L3 1          RETURN TO USER             80318880
                     *                                          *       80318890
                     *              CONSTANTS                   *       80318900
                     *                                          *       80318910
0C45 0 8000          K8000 DC       /8000                               80318920
0C46 0 0017          K23   DC       23                                  80318930
0C47 0 000D          K13   DC       13                                  80318940
0C4B 0 0009          K9    OC       9                                   80318950
0C49 0 0000          TBPTR OC       *-*        SAVE LOC-DDEF POINTER    80318960
0C4A 1 0C5E          OMDVA DC       DMDVT&11&7 ADDR DF INTERRUPT VEC    80318970
0C4B 0 0000          DVASV DC       *-*        DEVICE TBL AODR SAVE AREA 80318980
                     *                                                  80318990
                     *   $2790 OUMMY CDMMUNICATIDNS AREA                80319000
                     *                                                  80319010
0C4C 0 0000          DMDVT DC       *-*                                 80319020
0C4D 0 0000                DC       *-*                                 80319030
0C4E 0 0000                DC       *-*                                 80319040
0C4F 0 0000                DC       *-*                                 80319050
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0C50 0 0000              0C      *-*                                          80 319060
0C51 0 0000              0C      *-*                                          80 319070
0C52 0 0000              0C      *-*                                          80 319080
0C53 0 0000              0C      *-*                                          80 319090
0C54 0 0000              0C      *-*                                          80 319100
0C55 0 0000              DC      *-*                                          80 319110
0C56 0 0000              0C      *-*                                          80 319120
0C57 0 0000              DC      *-*                                          80 319130
0C58 0 0000              0C      *-*                                          80 319140
0C59 0 0000              DC      *-*                                          80 319150
0C5A 0 0000              0C      *-*                                          80 319160
0C5B 0 0000              0C      *-*                                          80 319170
0C5C 0 0000              DC      *-*                                          80 319180
0C50 0 0000              0C      *-*                                          80 319190
0C5E 0 0000              DC      *-*                                          80 319200
0C5F 0 0000              DC      *-*                                          80 319210
0C60 0 0000              DC      *-*                                          80 319220
0C61 0 0000        RTNTO DC      *-*       NO RESPONSE TIME-OUT               80 319230
0C62 1 4C80 0C61         8   I  RTNTO      * BRANCH CONTROL                   80 319240
                   *                                                         80 319250
                   *                                                    *    80 319260
                   *   *    *    *    *    *    *    *    *    *    *    *  80 319270
                   *     AREA CODE TABLE AODRESS TA8LE                   *  80 319280
                   *              *    *    *    *    *                   *  80 319290
                   *              OFT PIO = TA8LE INOEX                   *  80 319300
                   *   *    *    *    *    *    *    *    *    *    *    *  80 319310
                   *                                                    *    80 319320
0C64 0 0000        ACTAT DC      0          NOT                              80 319330
0C65 0 0000              DC      0          * DFT                            80 319340
0C66 0 0000              DC      0          *   PIDS                         80 319350
0C67 0 0000              DC      0          *      ***                       80 319360
0C68 1 0CA4              0C      05455      PIO 04                           80 319370
0C69 1 0CA7              DC      01627      PIO 05                           80 319380
0C6A 1 0CAA              DC      05316      PIO 06                           80 319390
0C68 1 0CC5              DC      02400      PIO 07                           80 319400
0C6C 1 0C88              DC      D2310      PIO 08                           80 319410
0C6D 1 0C88              0C      D2310      PID 09                           80 319420
0C6E 1 0CC2              DC      01443      PID 0A                           80 319430
0C6F 1 0CC5              DC      D2400      PID 08                           80 319440
0C70 1 0CBB              DC      D2310      PID 0C                           80 319450
0C71 1 0C88              DC      02310      PIO 0D                           80 319460
0C72 0 0000              DC      0          UNASSIGNED                       80 319470
0C73 1 0CC8              0C      D1442      PID 0F                           80 319480
0C74 0 0000              DC      0          UNASSIGNED                       80 319490
0C75 0 0000              DC      0          UNASSIGNED                       80 319500
0C76 0 0000              DC      0          UNASSIGNED                       80 319510
0C77 0 0000              DC      0          UNASSIGNED                       80 319520
0C78 0 0000              DC      0          UNASSIGNED                       80 319530
0C79 0 0000              DC      0          UNASSIGNED                       80 319540
0C7A 0 0000              DC      0          UNASSIGNED                       80 319550
0C78 0 0000              DC      0          UNASSIGNED                       80 319560
0C7C 0 0000              DC      0          UNASSIGNED                       80 319570
0C7D 0 0000              DC      0          UNASSIGNED                       80 319580
0C7E 0 0000              DC      0          UNASSIGNED                       80 319590
0C7F 0 0000              DC      0          UNASSIGNED                       80 319600
0C80 0 0000              DC      0          UNASSIGNED                       80 319610
0CB1 0 0000              DC      0          UNASSIGNED                       80 319620
0C82 0 0000              0C      0          UNASSIGNED                       80 319630
0C83 0 0000              DC      0          UNASSIGNED                       80 319640
0C84 1 0CCD              DC      DDAI       PID 20                           80 319650
0C85 1 0CCD              0C      DDAI       PID 21                           80 319660
0C86 1 0CCD              DC      DDAI       PIO 22                           80 319670
0C87 1 0CCD              DC      0DAI       PID 23                           80 319680
0C88 1 0C02              DC      DDI        PIO 24                           80 319690
0C89 1 0CD2              DC      0DI        PID 25                           80 319700
0C8A 1 0CD5              DC      00A0       PIO 26                           80 319710
0C88 1 0CD5              DC      DDA0       PID 27                           80 319720
0C8C 0 0000              DC      0          PIO 28                           80 319730
```



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0C80 0 0000              DC      0          PID 29                           80 319740
0C8E 0 0000              DC      0          UNASSIGNEO                       80 319750
0C8F 0 0000              DC      0          UNASSIGNED                       80 319760
0C90 0 0000              DC      0          UNASSIGNED                       80 319770
0C91 0 0000              DC      0          UNASSIGNED                       80 319780
0C92 1 0CD8              DC      D2790      PID 2E                           80 319790
0C93 1 0CD8              DC      D2790      PID 2F                           80 319800
0C94 0 0000              DC      0          UNASSIGNED                       80 319810
0C95 0 0000              DC      0          UNASSIGNED                       80 319820
0C96 0 0000              DC      0          UNASSIGNED                       80 319830
0C97 0 0000              DC      0          UNASSIGNED                       80 319840
0C98 0 0000              DC      0          UNASSIGNED                       80 319850
0C99 0 0000              DC      0          UNASSIGNED                       80 319860
0C9A 0 0000              DC      0          UNASSIGNED                       80 319870
0C98 0 0000              DC      0          UNASSIGNED                       80 319880
0C9C 0 0000              DC      0          UNASSIGNED                       80 319890
0C9D 0 0000              DC      0          UNASSIGNED                       80 319900
0C9E 0 0000              DC      0          UNASSIGNED                       80 319910
0C9F 0 0000              DC      0          UNASSIGNED                       80 319920
0CA0 0 0000              DC      0          UNASSIGNED                       80 319930
0CA1 0 0000              DC      0          UNASSIGNED                       80 319940
0CA2 0 0000              DC      0          UNASSIGNED                       80 319950
0CA3 0 0000              DC      0          UNASSIGNED                       80 319960
                   *                                                    *    80 319970
                   *   *    *    *    *    *    *    *    *    *    *    *  80 319980
                   *     AREA CODE CHECK-CROSS REFERENCE TABLE          *  80 319990
                   *              *    *    *    *    *                   *  80 320000
                   *     THE WORD FOLLOWING EACH AREA CODE              *  80 320010
                   *     POINTS TO A LOCATION IN THE FIXED AREA         *  80 320020
                   *     OF MPX.AT THIS LOCATION IS THE ADDRESS         *  80 320030
                   *     OF THE DEVICE TABLE FOR THE PRECEEDING         *  80 320040
                   *     AREA CODE.                                     *  80 320050
                   *              *    *    *    *    *                   *  80 320060
                   *     THE AREA CODES ARE GROUPED FOR EACH            *  80 320070
                   *     DEVICE AND EACH GROUP IS TERMINATED            *  80 320080
                   *     BY THE WORD FFFF.                              *  80 320090
                   *   *    *    *    *    *    *    *    *    *    *    *  80 320100
                   *                                                    *    80 320110
0CA4 0 1800        D5455 DC      /1800      1054/55 PAPER TAPE               80 320120
0CA5 0 00DB              DC      $PAPT                                       80 320130
0CA6 0 FFFF              DC      /FFFF                                       80 320140
0CA7 0 2800        D1627 DC      /2800      1627 PLOTTER                     80 320150
0CA8 0 00E3              DC      $1627                                       80 320160
0CA9 0 FFFF              DC      /FFFF                                       80 320170
0CAA 0 0802        D5316 DC      /0802      1053/1816 PRINTER 1              80 320180
0CA8 0 00EF              DC      $TYPH                                       80 320190
0CAC 0 0804              DC      /0804      1053/1816 PRINTER 2              80 320200
0CAD 0 00F0              DC      $TYPH+1                                     80 320210
0CAE 0 0808              DC      /0808      1053/1816 PRINTER 3              80 320220
0CAF 0 00F1              DC      $TYPH+2                                     80 320230
0C80 0 0810              DC      /0810      1053/1816 PRINTER 4              80 320240
0C81 0 00F2              DC      $TYPH+3                                     80 320250
0C82 0 7802              DC      /7802      1053/1816 PRINTER 5              80 320260
0CB3 0 00F3              DC      $TYPH+4                                     80 320270
0C84 0 7804              DC      /7804      1053/1816 PRINTER 6              80 320280
0C85 0 00F4              DC      $TYPH+5                                     80 320290
0C86 0 7808              DC      /7808      1053/1816 PRINTER 7              80 320300
0C87 0 00F5              DC      $TYPH+6                                     80 320310
0CB8 0 7810              DC      /7810      1053/1816 PRINTER 8              80 320320
0C89 0 00F6              DC      $TYPH+7                                     80 320330
0C8A 0 FFFF              DC      /FFFF                                       80 320340
0CB8 0 2000        D2310 DC      /2000      1810 DISK DRIVE 1                80 320350
0C8C 0 00E7              DC      $DKPH                                       80 320360
0CBD 0 4000              DC      /4000      1810 DISK DRIVE 2                80 320370
0C8E 0 00E8              DC      $DKPH+1                                     80 320380
0C8F 0 4800              DC      /4800      1810 DISK DRIVE 3                80 320390
0CC0 0 00E9              DC      $DKPH+2                                     80 320400
0CC1 0 FFFF              DC      /FFFF                                       80 320410
```

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0CC2 0 3000          D1443 DC      /3000       1443 PRINTER                  B0320420
0CC3 0 00D8                DC      $1443                                     B0320430
0CC4 0 FFFF                DC      /FFFF                                     B0320440
0CC5 0 7000          D2400 DC      /7000       2400 MAGNETIC TAPE            B0320450
0CC6 0 00DC                DC      $MATP                                     B0320460
0CC7 0 FFFF                DC      /FFFF                                     B0320470
0CCB 0 1000          D1442 DC      /1000       1442 CARD RDR/PCH 1           B0320480
0CC9 0 00D9                DC      $1442                                     B0320490
0CCA 0 8800                OC      /8800       1442 CARD RDR/PCH 2           B0320500
0CCB 0 00DA                DC      $1442+1                                   B0320510
0CCC 0 FFFF                DC      /FFFF                                     B0320520
0CCD 0 5000          DDAI  DC      /5000       ANALOG INPUT                  B0320530
0CCE 0 00DD                DC      $AIIN                                     B0320540
0CCF 0 B000                DC      /8000       ANALOG INPUT EXPANDER         B0320550
0CD0 0 D0DE                DC      $AIIN+1                                   B0320560
0CD1 0 FFFF                OC      /FFFF                                     B0320570
0CD2 0 5B00          DDI   DC      /5800       DIGITAL INPUTS                B0320580
0CD3 0 00E1                DC      $DINP                                     B0320590
0CD4 0 FFFF                DC      /FFFF                                     B0320600
0CD5 0 6000          DDAO  DC      /6000       DIGITAL/ANALOG OUTPUT         B0320610
0CD6 0 00E2                DC      $DAOP                                     B0320620
0CD7 0 FFFF                DC      /FFFF                                     B0320630
0CD8 0 3800          D2790 DC      /3B00       2790 DATA COLLECTIUN          B0320640
0CD9 0 0053                DC      $2790&0     * SYSTEM--LDDP 1              B0320650
0CDA 0 9B00                DC      /9B00       *         LOOP 2              B0320660
0CDB 0 8053                DC      $2790+/B000                               B0320670
0CDC 0 FFFF          TBEND DC      /FFFF                                     B0320680
                     *                                                       B0320690
                     ***********************************************         B0320700
                     *        MPXDM - RELEASE DEVICE ROUTINE       *         B0320710
                     ***********************************************         B0320720
                     *                                             *         B0320730
                     *                ** RLDV **                   *         B0320740
                     *                                             *         B0320750
                     *    THIS ROUTINE IS USED TO RELEASE A        *         B0320760
                     *    REVIOUSLY REQUESTED DEVICE. THE          *         B0320770
                     *    RELEASE IS ACCOMPLISHED BY CLEARING      *         B0320780
                     *    80(ASSIGNED BIT)IN THE DFT'S DDEF. A     *         B0320790
                     *    CALL IS THEN MADE DN THE RESTR ROUTINE   *         B0320800
                     *    TO INSURE THAT THE MPX/MPXDM INTERFACE   *         B0320810
                     *    IS RESTORED TO A 'NO I/O INTERRUPT       *         B0320820
                     *    PENDING' STATE.                          *         B0320830
                     *                                             *         B0320840
                     *                CALLING SEQUENCE             *         B0320850
                     *                                             *         B0320860
                     *                BSI I RELDV                  *         B0320870
                     *                DC    ADDRS DDEF             *         B0320880
                     *                DC    ADDRS TERM             *         B0320890
                     *                C(RELOV) = RLDV              *         B0320900
                     *                                             *         B0320910
                     *    CALLED ROUTINES                          *         B0320920
                     *                                             *         B0320930
                     *        1. RESTR - INTERFACE RESTORE RTN     *         B0320940
                     *        2. ABORT - MPXDM ERROR ABORT RTN     *         B0320950
                     *                                             *         B0320960
                     * POSSIBLE ABORT CONDITIONS                   *         B0320970
                     *                                             *         B0320980
                     *  CODE  *            CONDITIDN               *         B0320990
                     *                                             *         B0321000
                     *  E020  *  DFT INDICATES THE RELEASE OF A    *         B0321010
                     *           NON-REQUESTED DEVICE.             *         B0321020
                     *                                             *         B0321030
                     * RDUTINE ENTRY    RLDV                       *         B0321040
                     * ROUTINE EXIT     RLEXT+4                    *         B0321050
                     *                                             *         B0321060
                     ***********************************************         B0321070
                     *                                             *         B0321080
0CDD 0 0D00          RLDV  DC      *-*         ENTRY-RETURN ADDRESS          B0321090
```



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                     *                                             *         B0321100
0CDE 0 692B                STX   1 RLEXT+1     SAVE IX 1                     B0321110
0CDF 0 6500 FFD2           LDX   L1 EOITA      SET INOEXING AODRESS          B0321120
0CE1 0 1010                SLA     16          * CLEAR DFT IN                B0321130
0CE2 0 D12B                STO   1 DFTOP-EDITA *OPERATIUN IND                B0321140
0CE3 0 D10F                STO   1 TOIND-EDITA CLR TIMED OUT IND             B0321150
0CE4 0 C11E                LD    1 STATS-EDITA FETCH STATUS WURD             B0321160
0CE5 0 EB29                DR      K4000       SET RELDV BIT 1               B0321170
0CE6 0 D11E                STO   1 STATS-EDITA UPOATE STATUS WORD            B0321180
0CE7 0 4057                BSI     RESTR       CALL RESTORE ROUTINE          B0321190
0CE8 1 6780 0CDD           LDX   I3 RLDV       IX 3 = CALL STRING            B0321200
0CEA 0 C780 0000           LD    I3 0          FETCH CALL DDEF               B0321210
0CEC 1 D400 1239           STO   L  ABM3       SAVE IN A8ORT MESSAGE         B0321220
0CEE 0 4B28                BSC     +Z          SKIP IF NDT APPROVED          B0321230
0CEF 0 700C                MDX     RLDVC       DDEF DK- BRANCH               B0321240
0CF0 1 7400 0D3E           MDX   L  ENDSW,0     SKIP IF ENO SWITCH OFF        B0321250
0CF2 0 7009                MDX     RLDVC       ENO SW ON - 8RANCH            B0321260
0CF3 0 67B0 FFE6           LDX   I3 ETPTR      IX 3 # EDIT POINTER           B0321270
0CF5 0 C300                LD    3 0           FETCH REQUESTED DDEF          B0321280
0CF6 1 0400 1238           STO   L  ABM2       SAVE IN ABORT MESSAGE         B0321290
                     *                                                       B0321300
0CFB 0 44B0 FFE7           8SI   I  ABORT      ABORT EXIT                    B0321310
0CFA 0 E020                DC      /E020       MIO-REL DEV NOT REQUESTED     B0321320
0CFB 0 0002                DC      2           WORO COUNT                    B0321330
                     *                                                       B0321340
0CFC 0 E013          RLDVC AND     K7FFF       REMOVE BIT 0                  B0321350
0CFD 0 D780 0000           STO   I3 0          REPLACE DDEF                  B0321360
0CFF 0 7301          RLDVD MDX     3 1         INCR CALL STRING IX           B0321370
0D00 0 C780 0000           LD    I3 0          FETCH PARAMETER               B0321380
0D02 1 F400 091C           EOR   L  TERM       CK FOR TERMINATOR             B0321390
0D04 1 4C20 0CFF           BSC   L  RLDVD,Z    BRANCH IF NOT TERM            B0321400
0D06 0 C11E                LD    1 STATS-EDITA FETCH STATUS WORD             B0321410
0D07 0 F0D7                EDR     K4000       CLEAR RELDV BIT 1             B0321420
0D0B 0 D11E                STO   1 STATS-EDITA REPLACE STATUS WURD           B0321430
                     *                                                       B0321440
0D09 D 6500 0000     RLEXT LDX   L1 0          RESTORE IX 1                  B0321450
0D08 D 6C00 FFF0           STX   L  DFTUP      SET DFT IN OP IND.            B0321460
0D0D 0 4FD0 0001           BSC   L3 1          RETURN TO USER                B0321470
                     *                                             *         B0321480
                     *                CUNSTANTS                    *         B0321490
                     *                                             *         B0321500
0DDF 0 4000          K4000 DC      /4000       HEX 4000                      B0321510
0010 0 7FFF          K7FFF OC      /7FFF       HEX 7FFF                      B0321520
                     *                                                       B0321530
                     *                                             *         B0321540
                     *                                             *         B0321550
                     ***********************************************         B0321560
                     *        MPXDM - ENO PROGRAM RUUTINE          *         B0321570
                     ***********************************************         B0321580
                     *                                             *         B0321590
                     *                ** MEND **                   *         B0321600
                     *                                             *         B0321610
                     *    RUUTINE MEND IS CALLED 8Y THE DFT AT     *         B0321620
                     *    THE COMPLETION UF EACH PROGRAM PASS      *         B0321630
                     *    AND UNDER CERTAIN DFT DEFINED ERRDR      *         B0321640
                     *    CONDITIONS.MEND IS ALSO CALLED 8Y THE    *         B0321650
                     *    MPXDM MTERM SU8RDUTINE WHEN PROGRAM      *         B0321660
                     *    OE-EXECUTION IS REQUESTED.               *         B0321670
                     *                                             *         B0321680
                     *    WHEN MEND IS CALLED BY THE DFT,IT WILL   *         B0321690
                     *    CALL THE DFT LOOP PROGRAM RDUTINE.WHEN   *         B0321700
                     *    THE DFT RETURNS,MEND BRANCHES TU THE     *         B0321710
                     *    MPXDM CONTROL RDUTINE.THIS OPERATION     *         B0321720
                     *    ESTABLISHES A CONTINOUS LUOP PROGRAM     *         B0321730
                     *    FUNCTION.                                *         B0321740
                     *                                             *         B0321750
                     *    WHEN MEND IS CALLED BY THE MTERM SUB-    *         B0321760
                     *    RDUTINE,IT WILL CALL THE DFT END RTN     *         B0321770
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*     TD ALLDW FOR DE-EXECUTIUN FUNCTIDNS.  *     80321780
*     WHEN THE DFT REUTRNS,MEND WILL PERFORM*     80321790
*     SDME HOUSEKEEPING AND THEN CALL DN THE*     80321800
*     CTLPT SUBROUTINE TD PRINT THE DXEQ    *     80321810
*     MESSAGE A001.MEND THEN EXITS TO MCTRL *     80321820
*     VIA THE RETURN ADDRESS IN MTERM.      *     80321830
*                                           *     80321840
*                 CALLLING SEQUENCE         *     80321850
*                                           *     80321860
*                 BSC I END                 *     80321870
*                 C(END) = MEND             *     80321880
*                                           *     80321890
*     CALLED RDUTINES                       *     80321900
*                                           *     80321910
*         1. DFT LDUP PRDGRAM RDUTINE       *     80321920
*         2. DFT END PRDGRAM RDUTINE        *     80321930
*         3. MCTRL - MPXDM CDNTROL RDUTINE  *     80321940
*                                           *     80321950
*     CALLED SUBRDUTINES                    *     80321960
*                                           *     80321970
*         1. CTLPT - DXEQ MESSAGE SETUP     *     80321980
*                                           *     80321990
* POSSIBLE ABORT CDNDITIONS                 *     80322000
*                                           *     80322010
*         NDNE                              *     80322020
*                                           *     80322030
* ROUTINE ENTRY     MEND                    *     80322040
* ROUTINE EXIT      MEXT1(DFT),MEXT2(MPXDM) *     80322050
*                                           *     80322060
*********************************************     80322070
*                                           *     80322080
0D11 0 6700 FFD2    MEND  LDX  L3 EDITA       SET MPXDM COMN INDEX      80322090
0D13 0 1010               SLA    16           CLEAR DFT IN              80322100
0D14 0 D32B               STD    3 DFTDP-EDITA *OPERATION INDICATOR       80322110
0D15 0 C31E               LD     3 STATS-EDITA SET END                   80322120
0D16 0 E826               OR     K0800         *RUUTINE STATUS           80322130
0D17 0 D31E               STD    3 STATS-EDITA   *BIT - BIT 4            80322140
0D18 0 6780 FFF2          LDX  I3 DFTID        IX3 = DFT PID ADDRESS     80322150
0D1A 0 7400 FFDB          MDX  L  XEQSW,0      SKIP IF DXEQ PRUG         80322160
0D1C 0 7013               MDX     MENDA        LOOP PROGRAM BRANCH       80322170
0D1D 0 6820               STX     ENDSW        SET END SWITCH            80322180
0D1E 0 6C00 FFFD          STX  L  DFTDP        SET DFT IN OP IND         80322190
                    *                                                   80322200
0D20 0 4780 0009          BSI  I3 9            TD DFT END ROUTINE        80322210
                    *                                                   80322220
0D22 0 6700 FFD2          LDX  L3 EDITA        SET MPXDM COMN INDEX      80322230
0D24 0 1010               SLA    16            * CLEAR DFT IN            80322240
0D25 0 D32B               STO    3 DFTOP-EDITA *OPERATION INDICATOR       80322250
0D26 0 D017               STO     ENDSW        CLEAR END SWITCH          80322260
0D27 0 D314               STO    3 ETPTR-EDITA CLR EDIT TABLE PUINTER      80322270
                    *                                                   80322280
                    *     LOG MESSAGE A001 -DXEQ DFT                    80322290
                    *                                                   80322300
0D28 1 4400 0A74          BSI  L  CTLPT        BRANCH TO PRINT           80322310
0D2A 0 0000               DC      0            DXEQ CONSTANT             80322320
0D2B 0 C31E               LD     3 STATS-EDITA CLEAR END ROUTINE         80322330
0D2C 0 F010               EOR     K0800        *BIT 4 FRDM INTERFACE     80322340
0D2D 0 D31E               STD    3 STATS-EDITA  * STATUS WDRD            80322350
                    *                                                   80322360
0D2E 1 4C80 0A40    MEXT1 BSC  I  MTERM        RETURN TO CDNTROL         80322370
                    *                                                   80322380
0D30 0 6C00 FFFD    MENDA STX  L  DFTOP        SET DFT IN OP IND         80322390
                    *                                                   80322400
0D32 0 4780 0008          BSI  I3 8            TO DFT LOOP PROG ADRS     80322410
                    *                                                   80322420
0D34 0 6700 FFD2          LDX  L3 EDITA        SET MPXDM CUMN INDEX      80322430
0D36 0 1010               SLA    16            * CLEAR DFT IN            80322440
0D37 0 D32B               STO    3 DFTDP-EDITA * OPERATION INDICATOR      80322450
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0D38 0 C31E               LD     3 STATS-EDITA CLEAR END RUUTINE         80322460
0D39 0 F003               EOR     K0800        * BIT 4 FROM INTERFACE     80322470
0D3A 0 D31E               STO    3 STATS-EDITA  * STATUS WORD             80322480
                    *                                                   80322490
0D3B 1 4C00 09B7    MEXT2 BSC  L  CTL1         RETURN TO CONTROL         80322500
                    *                                             *     80322510
                    *                  CONSTANTS                  *     80322520
                    *                                             *     80322530
0D3D 0 0800         K0800 DC       /0800       HEX 0800                  80322540
0D3E 0 0000         ENDSW DC       0           END SWITCH                80322550
                    *                                             *     80322560
                    ***********************************************     80322570
                    *         MPXDM - RESTORE INTERFACE RDUTINE   *     80322580
                    ***********************************************     80322590
                    *                                             *     80322600
                    *                  ** RESTR **                *     80322610
                    *                                             *     80322620
                    *     THIS ROUTINE IS CALLED BY ROUTINES      *     80322630
                    *     DMIR,TMOUT OR RLDV. IT IS USED TO       *     80322640
                    *     RESTDRE THE MPX/MPXDM INTERFACE         *     80322650
                    *     FOLLOWING AN I/O INTERRUPT(DMIR),A NO   *     80322660
                    *     RESPONCE TIME OUT(TMOUT) OR A RELEASE   *     80322670
                    *     DEVICE CALL(RLDV)PRIOR TU RECEIVING     *     80322680
                    *     AN I/O INTERRUPT OR NO RESPONCE TIME    *     80322690
                    *     OUT. RESTR WILL PERFORM THE FOLLOWING   *     80322700
                    *     FUNCTIONS.                              *     80322710
                    *                                             *     80322720
                    *     1.NUTIFY MPX TD TERMINATE NO RESPONCE   *     80322730
                    *       TIME OUT CALLS.                       *     80322740
                    *     2.DECREMENT THE I/O BUSY INDICATOR FOR  *     80322750
                    *       VARIABLE CORE.                        *     80322760
                    *     3.RESTORE THE DEVICE TABLE INTERRUPT    *     80322770
                    *       TRANSFER TO THE VALUE IT PREVIOUSLY   *     80322780
                    *       CONTAINED.                            *     80322790
                    *     4.CLEAR THE CUNTROL WORDS USED TO       *     80322800
                    *       SEQUENCE MPXDM DURING PENDING I/U     *     80322810
                    *       INTERRUPTS.                           *     80322820
                    *                                             *     80322830
                    *                  CALLING SEQUENCE           *     80322840
                    *                                             *     80322850
                    *                  BSI L RESTR                *     80322860
                    *                                             *     80322870
                    *     CALLED ROUTINES                         *     80322880
                    *                                             *     80322890
                    *         NONE                                *     80322900
                    *                                             *     80322910
                    *     CALLED SU8ROUTINES                      *     80322920
                    *                                             *     80322930
                    *         NUNE                                *     80322940
                    * PUSSIBLE ABORT CONDITIONS                   *     80322950
                    *                                             *     80322960
                    * NONE                                        *     80322970
                    *                                             *     80322980
                    * ROUTINE ENTRY     RESTR                     *     80322990
                    * RUUTINE EXIT      RESXT                     *     80323000
                    *                                             *     80323010
                    ***********************************************     80323020
                    *                                             *     80323030
0D3F 0 0000         RESTR DC       *-*         RETURN ADDRESS           80323040
                    *                                                   80323050
0D40 0 6929               STX    1 RES2+1      SAVE INDEX REG 1          80323060
0D41 0 6A2A               STX    2 RES2+3      SAVE INOEX REG 2          80323070
0D42 0 6B2B               STX    3 RES2+5      SAVE INDEX REG 3          80323080
0D43 0 6500 FFD2          LDX  L1 EDITA        IX 1 = HCCA INDEX         80323090
0D45 0 6680 FFD3          LDX  I2 DTADR        IX 2 = DEV TBL ADDRS      80323100
0D47 0 637F               LDX    3 CUN         IX 3 = FIXED AREA IX      80323110
                    *                                             *     80323120
                    *     STUP NO RESPONCE TIME-OUT               *     80323130
```

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                        *                                       *       80323140
                        *                                               80323150
0D48 0 1010             SLA     16          STOP NO RESPONCE            80323160
0D49 0 0333             STO   3 $CBAS-CON   *TIME OUT CALLS             80323170
                        *                                               80323180
                        *                                       *       80323190
                        *     DECREMENT I/O BUSY INDICATOR      *       80323200
                        *                                       *       80323210
004A 0 C11A             LO    1 BYICR-EDITA  FETCH AREA INCR IND        80323220
0D4B 0 4818             BSC     +-          SKIP IF NOT ZERO            80323230
0D4C 0 7007             MDX     RES0        BYPASS DECREMENT            80323240
004O 0 0BB3             XIO   3 $MK1-CON    MASK LEVELS 0 THRU 13       80323250
004E 0 0BB5             XIO   3 $MK2-CON    MASK LEVELS 14 THRU 23      80323260
004F 0 C110             LD    1 ARBSY-EDITA  FETCH I/O BUSY ADDRS       80323270
0D50 0 0001             STO     *+1         STORE IN DECR INSTRN        80323280
0D51 0 74FF 0000        MDX   L *-*,-1      DECREMENT AREA              80323290
0D53 0 1000             NOP                   *BUSY INDICATOR           80323300
                        *                                       *       80323310
                        *     RESTORE INTERRUPT TRANSFER VECTOR *       80323320
                        *                                       *       80323330
0054 0 C101             RES0  LD    1 DTAOR-EDITA GET VECTOR POINTER    80323340
0D55 1 F400 0C4A        EOR   L DMDVA       TEST FOR 2790 POINTER       80323350
0057 1 4C20 0D5B        BNZ     RES3        BRANCH IF NO                80323360
0D59 0 D400 0053        STO   L $2790       RESET $2790 TO 0 IF YES     80323370
                        *                                               80323380
005B 0 C2F5             RES3  LD    X2 OVISS      FETCH DT XFER VECTOR    80323390
005C 0 F12A             EOR   1 DMISS-EDITA IS IT FOR MPXDM             80323400
005D 0 4820             BSC     Z           SKIP IF YES                 80323410
005E 0 7002             MDX     RES1        BRANCH IF NO                80323420
0D5F 0 C11C             LD    1 DTIVS-EDITA  FETCH SAVED VECTOR         80323430
0D60 0 02F5             STO   X2 DVISS      STORE IN DEVICE TABLE       80323440
0D61 0 0BAF             RES1  XIO   3 $UMK1-CON  UNMASK SYSTEM ACCORDING  80323450
0062 0 0BB1             XIO   3 $UMK2-CON   *TO USER MASK REG           80323460
0063 0 1010             SLA     16                                      80323470
0064 0 0118             STO   1 NTTIM-EDITA  CLR TIMEOUT IND            80323480
0D65 0 D119             STO   1 NLINT-EDITA  CLR LAST INTRP IND         80323490
0D66 0 D11A             STO   1 BYICR-EDITA  CLR AREA INCR IND          80323500
0067 0 011B             STO   1 TIMON-EDITA  CLR TIMER IN PROG IND      80323510
0D68 0 D11C             STO   1 OTIVS-EDITA  CLR DT INTRP VECT SAVE     80323520
0069 0 6500 0000        RES2  LDX   L1 *-*        RESTORE INDEX REG 1   80323530
006B 0 6600 0000              LDX   L2 *-*        RESTORE INDEX REG 2   80323540
0D6D 0 6700 0000              LDX   L3 *-*        RESTORE INDEX REG 3   80323550
                        *                                               80323560
0D6F 1 4C80 0D3F        RESXT BSC   I  RESTR      RETURN TO USER        80323570
                        *                                       *       80323580
                        *                                       *       80323590
                        ***************************************         80323600
                        *       MPXDM - ERROR ROUTINE         *         80323610
                        ***************************************         80323620
                        *                                       *       80323630
                        *              ** ERR **                *       80323640
                        *                                       *       80323650
                        *     THIS ROUTINE IS USED FOR ERROR PRINT *    80323660
                        *     AND LOOP CONTROL. CONTROL OF THESE   *    80323670
                        *     FUNCTIONS IS COMMUNICATED TO THE     *    80323680
                        *     ROUTINE VIA CE SWITCHES.             *    80323690
                        *                                          *    80323700
                        *     THE C.E. SWITCH FUNCTIONS ARE        *    80323710
                        *                                          *    80323720
                        *    I CE SW I  ON/OFF  I     FUNCTION     *    80323730
                        *----I-------I----------I------------------*    80323740
                        *    I   12  I    ON    I LOOP ON ERROR    *    80323750
                        *    I       I   OFF    I CONTINUE ON ERROR *   80323760
                        *----I-------I----------I------------------*    80323770
                        *    I   13  I    ON    I BYPASS ERROR PRINT*   80323780
                        *    I       I   OFF    I ALLOW ERROR PRINT *   80323790
                        *----I-------I----------I------------------*    80323800
                        *                                       *       80323810
```



```
                        *                CALLING SEQUENCE       *       80323820
                        *                                       *       80323830
                        *                BSC I ERROR            *       80323840
                        *                DC    MSG - MESSAGE ADDR *      80323850
                        *                DC    BUSY - BUSY RETURN *      80323860
                        *                DC    LOOP - LOOP ERR ADR*      80323870
                        *                C(ERROR) = ERR         *       80323880
                        *                                       *       80323890
                        *     CALLED ROUTINES                   *       80323900
                        *                                       *       80323910
                        *        1. LG - MPXDM PRINT ROUTINE    *       80323920
                        *                                       *       80323930
                        *     CALLED SUBROUTINES                *       80323940
                        *                                       *       80323950
                        *        NONE                           *       80323960
                        *                                       *       80323970
                        * POSSIBLE ABORT CONDITIONS             *       80323980
                        *                                       *       80323990
                        * NONE                                  *       80324000
                        *                                       *       80324010
                        * ROUTINE ENTRY    ERR                 *       80324020
                        * ROUTINE EXIT     ERRXT               *       80324030
                        *                                       *       80324040
                        *****************************************       80324050
                        *                                       *       80324060
0D71 0 0000             ERR   DC      *-*         RETURN ADDRESS        80324070
                        *                                               80324080
0D72 0 6700 FFD2              LDX   L3 EDITA      IX3 = HCCA INDEX      80324090
0D74 0 1010                   SLA     16          CLEAR DFT IN          80324100
0D75 0 D32B                   STO   3 DFTOP-EDITA  *OPERATION INDICATOR 80324110
0D76 0 C023                   LD      K2000       SET BIT 2 IN          80324120
0D77 0 EB1E                   OR    3 STATS-EDITA  *INTERFACE STATUS    80324130
0D78 0 D31E                   STO   3 STATS-EDITA   *WORD               80324140
0D79 1 6780 0D71              LDX   I3 ERR        IX3 = CALL STRING     80324150
0D7B 0 C300                   LD    3 0           FETCH MSG ADDRESS     80324160
0D7C 0 D009                   STO     ERR01       SET IN LOG CALL       80324170
0D7D 0 C302                   LD    3 2           FETCH LOOP ADDRESS    80324180
0D7E 0 D019                   STO     SCESW       SAVE IT               80324190
0D7F 1 7403 0D71              MDX   L ERR,3       MODIFY RETURN ADDRESS 80324200
0D81 0 0816                   XIO     SCESW       SENSE CE SWITCHES     80324210
0D82 0 1802                   SRA     2           POSITION BYPASS ERR PRINT 80324220
0D83 0 4804                   BSC     E           SKIP IF NOT BYPASS    80324230
0D84 0 7004                   MDX     ERR02       BYPASS ERROR PRINTOUT 80324240
                        *                                               80324250
0D85 0 4015                   BSI     LG          BRANCH TO LOG ROUTINE 80324260
0D86 0 0000             ERR01 DC      *-*         ERR MESSAGE ADDRESS   80324270
0D87 1 0D85                   DC      ERR01-1     BUSY RETURN           80324280
0D88 0 0000                   DC      0000        TERM ADDRESS          80324290
                        *                                               80324300
0D89 0 080E             ERR02 XIO     SCESW       SENSE CE SWITCHES     80324310
0D8A 0 100C                   SLA     12          POSITION LOOP ERROR SW 80324320
0D8B 0 4810                   BSC     -           SKIP IF ON            80324330
0D8C 0 7002                   MDX     ERR03       NO LOOP               80324340
0D8D 0 C00A                   LD      SCESW       FETCH LOOP ADDRESS    80324350
0D8E 0 D0E2                   STO     ERR         SET IN EXIT ADDRESS   80324360
0D8F 0 C00A             ERR03 LD      K2000       REMOVE ERROR BIT      80324370
0D90 0 F400 FFF0              EOR   L STATS        * 2 IN INTERFACE     80324380
0D92 0 D400 FFF0              STO   L STATS         * STATUS WORD       80324390
0D94 0 6C00 FFFD              STX   L DFTOP       SET DFT IN OP IND     80324400
                        *                                               80324410
0D96 1 4C80 0D71        ERRXT BSC   I  ERR        RETURN TO USER        80324420
                        *                                       *       80324430
                        *                CONSTANTS              *       80324440
                        *                                       *       80324450
0D98    0000                  BSS   E 0                                 80324460
0D98 0 0000             SCESW DC      *-*         WORK STORAGE          80324470
0D99 0 0760                   DC      /0760       SENSE CE SWS IUCC     80324480
0D9A 0 2000             K2000 DC      /2000       HEX 2000              80324490
```

```
*                                                 *      80324500
***************************************************      80324510
*        MPXDM - LOG ROUTINE                      *      80324520
***************************************************      80324530
*                                                 *      80324540
*                  ** LG **                       *      80324550
*                                                 *      80324560
*     THIS ROUTINE WILL 8UILO THE DIAGNOSTIC      *      80324570
*     OUTPUT MESSAGES OEFINED IN THE CALL         *      80324580
*     STRING OF EITHER MPXOM OR OFT LOG           *      80324590
*     CALLS.                                      *      80324600
*     THE DATA TO 8E PRINTED WILL 8E CONVER-      *      80324610
*     TED TO SINGLE OR DOU8LE PRECISIUN           *      80324620
*     OECIMAL,OR HEXIDECIMAL PRINT CODE           *      80324630
*     OEPENDING ON THE HEX/DEC CONTROL WORD       *      80324640
*     IN THE MESSAGE STRING.                      *      80324650
*     WHEN PRINTING MULTILINE MESSAGES,THE        *      80324660
*     PID,MIO,RIO ANO RAO WILL 8E PRINTED UN      *      80324670
*     THE 1ST LINE ONLY.                          *      80324680
*     LG CALLS ON EITHER MPX PRNTN OR TYPEN       *      80324690
*     TO PERFORM THE ACTUAL PRINTING.             *      80324700
*                                                 *      80324710
*                  CALLING SEQUENCE               *      80324720
*                                                 *      80324730
*                  BSI I LOG                      *      80324740
*                  DC    MSGA - MSG AOORS         *      80324750
*                  DC    BUSY - 8USY RETURN       *      80324760
*                  DC    TERM - TERM AODRS        *      80324770
*                  C(LOG) = LG                    *      80324780
*                                                 *      80324790
*     CALLEO ROUTINES                             *      80324800
*                                                 *      80324810
*         1. PRNTN - MPX 1443 PRINT ROUTINE       *      80324820
*         2. TYPEN - MPX 1053/1816 PRINT RTN      *      80324830
*                                                 *      80324840
*     CALLEO SUBROUTINES                          *      80324850
*                                                 *      80324860
*         1. LGHEX - CONVERT TO CODEO HEX         *      80324870
*         2. LGOEC - CONVERT TO COOEO DEC         *      80324880
*         3. LOAO  - 8UILD OUTPUT MESSAGE         *      80324890
*         4. BAKUP - VERIFY OP CUMPLETE.          *      80324900
*                                                 *      80324910
* POSSI8LE ABORT CONOITIONS                       *      80324920
*                                                 *      80324930
* NONE                                            *      80324940
*                                                 *      80324950
* ROUTINE ENTRY    LG                             *      80324960
* ROUTINE EXIT     LGEXT                          *      80324970
*                                                 *      80324980
***************************************************      80324990
*                                                 *      80325000
0098 0 0000        LG    OC      *-*       RETURN ADDRESS          80325010
*                                                               80325020
009C 0 6700 FFD2         LDX  L3 EDITA     SET HCCA INOEX          80325030
009E 0 1010              SLA     16        CLEAR OFT IN            80325040
00F9 0 0328              STO   3 OFTOP-EOITA *OPERATION INO        80325050
00A0 0 C31E              LO    3 STATS-EOITA SET INTERFACE         80325060
00A1 0 E872              OR      K1000       * STATUS WORO         80325070
00A2 0 031E              STO   3 STATS-EOITA   * BIT 3             80325080
00A3 0 6963              STX   1 LGEND+1     SAVE INOEX 1          80325090
00A4 0 6A64              STX   2 LGEND+3     SAVE INOEX 2          80325100
00A5 0 6600 FF70   LG00  LDX  L2 INOUT       IX 2 = MESSAGE AREA   80325110
00A7 0 1010              SLA     16                                80325120
00A8 1 0400 0E57         STO   L M12SW       CLEAR HALF WORO SW    80325130
00AA 0 0400 FF69         STO   L MSGWC       CLEAR MSG WORO COUNT  80325140
00AC 1 6580 009B         LDX  I1 LG          IX 1 = CALL STRING AORS 80325150
00AE 0 C100              LD    1 0           MESSAGE STRING AODRS  80325160
00AF 0 0004              STO     LG01+1      SAVE ADDRESS          80325170
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00B0 0 C102              LD    1 2           FETCH TERM ADDRESS      80325180
00B1 0 D400 FF0C         STO   L LOGAD       SAVE ADDRESS            80325190
00B3 0 6500 0000   LG01  LDX  L1 *-*         IX1 = MSG STRING ADRS   80325200
00B5 0 1090              SLT     16          CLEAR Q REG             80325210
00B6 0 C100              LD    1 0           FETCH LINE NM8R/WD CT   80325220
00B7 0 1808              RTE     24          LINE NM8R TU Q-WD CT TU'A' 80325230
00B8 0 1808              SRA     8           POSITION WORD CUUNT     80325240
00B9 1 8400 0994         A     L K1          ADD 1                   80325250
00B8 0 D059              STO     LOGWC       SAVE CALL WORD CUUNT    80325260
00BC 0 18C8              RTE     8           POSITION LINE NUMBER    80325270
00B0 1 4C20 00D3         8SC   L LG03,Z      8RANCH IF NOT 1ST LINE  80325280
00B8F 0 6580 FFDA        LDX  I1 ACTIV       IX1 = AODRS UF ACT PID  80325290
00C1 0 C100              LD    1 0           FETCH PID TO 'A'        80325300
00C2 0 405F              BSI     LGHEX       CONVERT PID TO PRINT CUDE 80325310
00C3 0 6906              STX   1 LG02+1      SAVE CUNTENTS OF IX1    80325320
00C4 1 6580 00B4         LDX  I1 LG01+1      IX1 = MSG STRING ADRS   80325330
00C6 0 7102              MOX   1 2           ADJ TO ADDRS OF MSG ID  80325340
00C7 0 405A              8SI     LGHEX       CONVERT MID TO PRINT CUDE 80325350
00C8 0 69E8              STX   1 LG01+1      SAVE MSG STRING ADRS    80325360
00C9 0 6500 0000   LG02  LDX  L1 *-*         IX1 = ADDRESS UF RTN ID 80325370
00C8 0 4056              8SI     LGHEX       CONVERT RID TU PRINT CUDE 80325380
00CC 0 4055              8SI     LGHEX       CONVERT RAD TO PRINT CODE 80325390
00CD 1 6580 00B4         LDX  I1 LG01+1      IX1 = ADDRESS CALL TERM 80325400
00CF 0 C400 FFC0         LD    L CUDE        FETCH SPACE CODE        80325410
0001 0 4067              8SI     LOAO        SET XTRA SP IN UUTPUT   80325420
0002 0 7007              MDX     LG04        BYPASS NOT 1ST LINE OPER 80325430
                         *                                         80325440
                         *   THIS SECTION BYPASSES THE PRINTING OF * 80325450
                         *   PID,MID,RIO ANO RAO ON MULTIPLE LINE  * 80325460
                         *   MESSAGES 8Y FILLING THOSE PRINT       * 80325470
                         *   POSITIONS WITH SPACES.                * 80325480
                         *                                         80325490
0003 0 6315              LG03  LDX   3 21        IX 3 = 21 SPACES        80325500
00D4 0 C400 FFC0         LO    L CUDE        FETCH CODED SPACE       80325510
00D6 0 4062              8SI     LUAO        BRANCH TU STORE IN OUTPUT 80325520
00D7 0 73FF              MDX   3 -1          SKIP AFTER 21 SPACES    80325530
00D8 0 70FB              MDX     LG03+1      LUOP TIL DONE           80325540
00D9 0 7103              MDX   1 3           AOJUST MSG STRING ADRS  80325550
                         *                                         80325560
                         *  *   *   *   *   *   *   *   *   *   *  80325570
                         *   THIS SECTIUN WILL CALL ON EITHER THE  * 80325580
                         *   HEX OR DEC CUNVERSION RUUTINES ACCUR- * 80325590
                         *   DING TU THE CONTENTS OF THE HEX/DEC SW* 80325600
                         *   IN THE MESSAGE STRING.                * 80325610
                         *                                         80325620
                         *         HEX/DEC SW = 0000 CALL LGHEX    * 80325630
                         *         HEX/DEC SW = XX01 CALL LGDEC    * 80325640
                         *                                         80325650
                         *  *   *   *   *   *   *   *   *   *   *  80325660
                         *                                         80325670
00DA 0 C1FE        LG04  LD    1 -2          FETCH HEX/DEC SWITCH    80325680
00DB 0 4804              8SC     E           SKIP IF HEX MODIFIERS   80325690
00DC 0 7006              MOX     LG07        DECIMAL MODS - 8RANCH   80325700
00DD 1 74FF 0E15   LG05  MDX   L LOGWC,-1    SKIP IF ALL MODS CNVRTD 80325710
00DF 0 7001              MDX     LG06        8RANCH TU CONTINUE      80325720
00E0 0 7003              MDX     LG07A       BRANCH TO UUTPUT MESSAGE 80325730
00E1 0 4040        LG06  8SI     LGHEX       CONVERT WORO TO PRNT CODE 80325740
00E2 0 70FA              MDX     LG05        LOOP TIL ALL WORDS CVRTD 80325750
00E3 0 4076        LG07  8SI     LGOEC       8RANCH TU CONVERT TO DEC 80325760
                         *                                         80325770
                         *   THIS SECTION WILL OUTPUT THE MESSAGE  * 80325780
                         *   BY CALLING ON EITHER MPX PRNTN OR     * 80325790
                         *   TYPEN AS SPECIFIEO BY OUTPUT DEVICE   * 80325800
                         *   EDIT.                                 * 80325810
                         *                                         80325820
00E4 0 6700 FFD2   LG07A LDX  L3 EDITA       SET MPXOM COMN INDEX    80325830
00E6 0 C031              LD      SPC53       FETCH 53 CUOED D8L SPACE 80325840
00E7 0 7400 FFDO         MDX   L OUTDV,0     SKIP IF USING 1053      80325850
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00E9 0 1010              SLA     16          ZERO 'A' FOR 1443 DBL SPC   80325860
00EA 0 0390              STO   3 WDCNT-EDITA STORE IN OUTPUT MESSAGE      80325870
00EB 0 7406 FF69         MDX   L MSGWC,6     INCLUDE HDNG IN WD CT       80325880
00E0 0 6500 00B9   LG08  LDX   L1 $TYPE      IX = MPX TYPE XFER ADDRS    80325890
00EF 0 6200              LDX   2 0           IX TO FETCH 1053 PARAMETER  80325900
00F0 0 C30B              LD    3 OUTDV-EDITA  FETCH OUTPUT DEVICE TYPE    80325910
00F1 1 4C18 00F5         BSC   L LG08A,+-    BRANCH ZERO = 1053          80325920
00F3 0 7101              MDX   1 1           XFER ADDRESS FOR PRNTN      80325930
00F4 0 6201              LDX   2 1           IX TO FETCH 1443 PARAMETER  80325940
00F5 1 C600 0E16   LG08A LD    L2 CTL53      FETCH PROPER CTRL PARAM     80325950
00F7 0 0028        LG09  STO     LISTP+7     SET IN I/O LIST             80325960
00F8 0 6C00 FFFE         STX   L MPXOP       SET MPX IN OPER IND         80325970
00FA 0 4580 0000         BSI   I1 0          CALL MPX PRINT ROUTINE      80325980
00FC 1 0E19              DC      LISTP       I/O LIST ADDRESS            80325990
00F0 0 1010        LG10  SLA     16          CLEAR MPX IN                80326000
00FE 0 032C              STO   3 MPXOP-EDITA *OPERATION INDICATOR        80326010
00FF 0 C019              LD      LISTP       FETCH LINK/BUSY PARAM       80326020
0E00 1 4C20 00F0         BSC   L LG10,Z      BRANCH IF BUSY              80326030
0E02 1 4400 0EB6         BSI   L BAKUP       GO TEST OP COMPLETE         80326040
0E04 1 7403 0D9B         MDX   L LG,3        MODIFY CALL FOR RETURN      80326050
                         *                                               80326060
0E06 0 6500 0000   LGEND LDX   L1 0          RESTORE INDEX 1             80326070
0E08 0 6600 0000         LDX   L2 0          RESTORE INDEX 2             80326080
                         *                                               80326090
0E0A 0 C31E              LD     3 STATS-EDITA  REMOVE LOG BIT 3          80326100
0E0B 0 F008              EOR     K1000       *FROM INTERFACE             80326110
0E0C 0 031E              STO   3 STATS-EDITA  *STATUS WORD                80326120
0E0D 1 7400 0B12         MDX   L POLL,0      SKIP IF OFT POLL            80326130
0E0F 0 7002              MDX     *+2                                     80326140
0E10 0 6C00 FFFD         STX   L OFTOP       SET OFT IN OP IND           80326150
                         *                                               80326160
0E12 1 4C80 0D9B   LGEXT BSC   I  LG         RETURN TO USER              80326170
                         *                                          *    80326180
                         *              CONSTANTS                   *    80326190
                         *                                          *    80326200
0E14 0 1000        K1000 OC      /1000       HEX 1000                    80326210
0E15 0 0000        LOGWC OC      0           CALL WORD COUNT             80326220
0E16 0 2110        CTL53 OC      /2110       1053 I/O CONTROL PARAM      80326230
0E17 0 20F0        CTL43 OC      /20F0       1443 I/O CONTROL            80326240
0E18 0 2121        SPC53 DC      /2121       DOUBLE SPACE -1053 CODE     80326250
                         *                                               80326260
                         *     MPX PRINT CALL I/O PARAMETER LIST         80326270
                         *                                               80326280
0E19 0 0000        LISTP OC      *-*         LINK/BUSY                   80326290
0E1A 0 0000              OC      0          EXIT TYPE                   80326300
0E1B 0 0000              DC      *-*        SYSTEM USE                  80326310
0E1C 0 0000              DC      *-*          *     *                   80326320
0E1D 0 0000              OC      *-*          *     *                   80326330
0E1E 0 0000              OC      *-*        SYSTEM USE                  80326340
0E1F 0 0000              OC      0          ERROR PARAMETER             80326350
0E20 0 0000              OC      0          CONTROL PARAMETER           80326360
0E21 0 FF69              OC      MSGWC      OUTPUT AREA                 80326370
                         *                                          *    80326380
                         *------------------------------------------*    80326390
                         *       LG - LGHEX SUBROUTINE              *    80326400
                         *------------------------------------------*    80326410
                         *                                          *    80326420
                         *     THIS SUBROUTINE CONVERTS MACHINE HEX *    80326430
                         *     TO PRINT CODE HEX. THE PRINT CODE    *    80326440
                         *     (1443 OR 1053/1816) IS DETERMINED BY *    80326450
                         *     THE OUTPUT DEVICE SPECIFIED IN MPXDM *    80326460
                         *     EDIT.                                *    80326470
                         *     ONE WORD IS CONVERTED EACH TIME THE  *    80326480
                         *     SUBROUTINE IS ENTERED. LGHEX CALLS ON*    80326490
                         *     LOAD TO STORE THE CONVERTED WORD IN  *    80326500
                         *     THE OUTPUT MESSAGE.                  *    80326510
                         *                                          *    80326520
                         *              CALLING SEQUENCE            *    80326530
```



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                         *                                          *    80326540
                         *              BSI   LGHEX                 *    80326550
                         *              IX 1 = ADDRS OF WORD        *    80326560
                         *                     TO CONVERT           *    80326570
                         *                                          *    80326580
                         *     CALLED ROUTINES                      *    80326590
                         *                                          *    80326600
                         *         NONE                             *    80326610
                         *                                          *    80326620
                         *     CALLED SUBROUTINES                   *    80326630
                         *                                          *    80326640
                         *         1. LOAD  - BUILD OUTPUT MESSAGE  *    80326650
                         *                                          *    80326660
                         * POSSIBLE ABORT CONDITIONS                *    80326670
                         *                                          *    80326680
                         * NONE                                     *    80326690
                         *                                          *    80326700
                         * SUBROUTINE ENTRY    LGHEX                *    80326710
                         * SUBROUTINE EXIT     LGHXT                *    80326720
                         *                                          *    80326730
                         *------------------------------------------*    80326740
                         *                                          *    80326750
0E22 0 0000        LGHEX OC      *-*         RETURN ADDRESS              80326760
                         *                                               80326770
0E23 0 1090              SLT     16          CLEAR Q REG                 80326780
0E24 0 6304              LDX   3 4           SET CHARACTER               80326790
0E25 0 6B12              STX   3 CVCT        *CONVERT COUNTER = 4        80326800
0E26 0 6700 FFC1         LDX   L3 CODE+1     IX3=CHAR CODE TBL ADRS      80326810
0E28 0 C100              LD    1 0           FETCH WORD TO CONVERT       80326820
0E29 0 18CC              RTE     12          POSITION HI ORDER CHARACT   80326830
0E2A 0 0001        LGHX1 STO     LGHX2+1     PUT IN LOAD INSTRUCTION     80326840
0E2B 0 C700 0000   LGHX2 LD    L3 *-*         FETCH CODED CHARACTER       80326850
0E2D 0 400B              BSI     LOAD        BRANCH TO STORE IN OUTPUT   80326860
0E2E 0 1010              SLA     16          CLEAR ACC                   80326870
0E2F 0 1084              SLT     4           POSITION NEXT CHARACTER     80326880
0E30 1 74FF 0E38         MDX   L CVCT,-1     SKIP WHEN 4 CONVERTED       80326890
0E32 0 70F7              MDX     LGHX1       BRANCH TO CONVERT NEXT      80326900
                         *                                               80326910
0E33 0 7101              MDX   1 1           INCREMENT WORD INDEX        80326920
0E34 0 C3FF              LD    3 -1          FETCH CODED SPACE           80326930
0E35 0 4003              BSI     LOAD        BRANCH TO STORE IN OUTPUT   80326940
                         *                                               80326950
0E36 1 4C80 0E22   LGHXT BSC   I  LGHEX      RETURN TO USER              80326960
                         *                                          *    80326970
                         *              CONSTANTS                   *    80326980
                         *                                          *    80326990
0E38 0 0000        CVCT  DC      0           CONVERSION COUNTER          80327000
                         *                                          *    80327010
                         *------------------------------------------*    80327020
                         *       LG - LOAD SUBROUTINE               *    80327030
                         *------------------------------------------*    80327040
                         *                                          *    80327050
                         *     THIS SUBROUTINE IS USED TO BUILD THE *    80327060
                         *     CODED OUTPUT MESSAGE STRING IT PACKS *    80327070
                         *     THE CHARACTERS 2 PER WORD AND STORES *    80327080
                         *     THEM IN THE OUTPUT AREA. THE OUTPUT  *    80327090
                         *     AREA BEGINS WITH THE WORD COUNT AT   *    80327100
                         *     LOCATION MSGWC(FF69).THE VARIABLE OUT*    80327110
                         *     PUT AREA STARTS AT LOC.WDCNT(FF6F).  *    80327120
                         *                                          *    80327130
                         *              CALLING SEQUENCE            *    80327140
                         *                                          *    80327150
                         *              BSI   LOAD                  *    80327160
                         *              'A'REG = CHARACTER          *    80327170
                         *              IX 2 = LOCATION TO STORE    *    80327180
                         *                     NEXT WORD.           *    80327190
                         *                                          *    80327200
                         *     CALLED ROUTINES                      *    80327210
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                         *                                       *      80 327220
                         *          NONE                         *      80 327230
                         *                                       *      80 327240
                         *      CALLED SUBROUTINES               *      80 327250
                         *                                       *      80 327260
                         *          NONE                         *      80 327270
                         *                                       *      80 327280
                         *  POSSIBLE ABORT CONDITIONS            *      80 327290
                         *                                       *      80 327300
                         *  NONE                                 *      80 327310
                         *                                       *      80 327320
                         *  SUBROUTINE ENTRY      LOAD           *      80 327330
                         *  SUBROUTINE EXIT       LDEXT          *      80 327340
                         *                                       *      80 327350
                         *---------------------------------------*      80 327360
                         *                                       *      80 327370
                         *                                       *      80 327380
0E39 0 0000              LOAD  DC      *-*       RETURN ADDRESS         80 327390
                         *                                              80 327400
0E3A 0 7400 FFDD               MDX  L  OUTDV,0   SKIP IF USING 1053     80 327410
0E3C 0 1808                    SRA     8         POSITION 1443 CODE     80 327420
0E3D 1 E400 0A3A               AND  L  KOOFF     REMOVE UNWANTED BITS   80 327430
0E3F 0 DB1B                    STD     TEMP      SAVE 'A' AND 'Q' REGS  80 327440
0E40 1 7400 0E57               MDX  L  M12SW,0   SKIP IF 1ST WD OF PAIR 80 327450
0E42 0 7004                    MDX     LD1       2ND WORD BRANCH        80 327460
0E43 0 1010                    SLA     16        CLEAR OUTPUT LOCATION  80 327470
0E44 0 D200                    STO   2 0         *TO 8E STORED INTO     80 327480
0E45 0 C012                    LD      TEMP      FETCH CHARACTER        80 327490
0E46 0 1008                    SLA     8         POSITION 1ST WORD      80 327500
0E47 0 EA00              LD1   OR    2 0         PACK DATA WITH         80 327510
0E48 0 D200                    STO   2 0          *PREVIOUS             80 327520
0E49 1 7400 0E57               MDX  L  M12SW,0   SKIP IF 1ST WORD       80 327530
0E4B 0 7001                    MDX     *+1       BRANCH-NOT 1ST WORD    80 327540
0E4C 0 7003                    MDX     LD2       1ST WORD BRANCH        80 327550
0E4D 0 7201                    MDX   2 1         INCR STORAGE INDEX     80 327560
0E4E 0 7401 FF69               MDX  L  MSGWC,1   OUTPUT WORD COUNT +1    80 327570
0E50 0 C006              LD2   LD      M12SW     FETCH 1ST/2ND SWITCH   80 327580
0E51 1 F400 0994               EOR  L  K1        COMPLEMENT             80 327590
0E53 0 D003                    STO     M12SW     SAVE IT                80 327600
0E54 0 C803                    LDD     TEMP      RESTORE A AND Q REGS   80 327610
                         *                                             80 327620
0E55 1 4C80 0E39         LDEXT BSC  I  LOAD      RETURN TO USER         80 327630
                         *                                       *      80 327640
                         *              CONSTANTS                *      80 327650
                         *                                       *      80 327660
0E57 0 0000              M12SW DC      0         WORD 1/2 SWITCH        80 327670
0E58 0 0000 0000         TEMP  DEC     0         A AND Q STORAGE        80 327680
                         *                                       *      80 327690
                         *---------------------------------------*      80 327700
                         *        LG - LGDEC SUBROUTINE          *      80 327710
                         *---------------------------------------*      80 327720
                         *                                       *      80 327730
                         *     THIS SUBROUTINE CONVERTS MACHINE HEX *    80 327740
                         *     TO PRINT CODED DECIMAL. IT IS ENTERED *   80 327750
                         *     WHEN THE HEX/DEC WORD IN THE MESSAGE  *   80 327760
                         *     STRING CONTAINS A 1 IN BIT POSITION   *   80 327770
                         *     15(XX01). IF THE 2 HI-ORDER HEX       *   80 327780
                         *     CHARACTERS (XX) ARE 00,THEN ALL WORDS *   80 327790
                         *     IN THE MESSAGE STRING WILL 8E CON-    *   80 327800
                         *     VERTED TO SINGLE PRECISION DECIMAL. IF*   80 327810
                         *     THE 2 HI-ORDER HEX CHARACTERS CONTAIN *   80 327820
                         *     OTHER THAN 00 THEN THE 8ITS IN THE    *   80 327830
                         *     CHARACTERS CORRESPOND TO THE DATA     *   80 327840
                         *     WORDS IN THE MESSAGE STRING. A BIT    *   80 327850
                         *     BEING ON DESIGNATES THE 1ST WORD OF A *   80 327860
                         *     PAIR OF WORDS TO BE CONVERTED TO      *   80 327870
                         *     DOUBLE PRECISION DECIMAL.             *   80 327880
                         *     LGDEC WILL CALL ON THE LOAD ROUTINE   *   80 327890
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                         *     TO STORE THE CONVERTED WORDS IN THE   *      80 327900
                         *     OUTPUT STRING.                        *      80 327910
                         *                                           *      80 327920
                         *                 CALLING SEQUENCE          *      80 327930
                         *                                           *      80 327940
                         *                 BSI   LGDEC               *      80 327950
                         *                 'A' REG = HEX/DEC WORD    *      80 327960
                         *                 IX 1 = ADDRESS OF MESSAGE *      80 327970
                         *                                           *      80 327980
                         *     CALLED ROUTINES                       *      80 327990
                         *                                           *      80 328000
                         *        NONE                               *      80 328010
                         *                                           *      80 328020
                         *     CALLED SUBROUTINES                    *      80 328030
                         *                                           *      80 328040
                         *                                           *      80 328050
                         *        1. LOAD  - BUILD OUTPUT MESSAGE    *      80 328060
                         *                                           *      80 328070
                         *  POSSIBLE ABORT CONDITIONS                *      80 328080
                         *                                           *      80 328090
                         *  NONE                                     *      80 328100
                         *                                           *      80 328110
                         *  SUBROUTINE ENTRY    LGDEC                *      80 328120
                         *  SUBROUTINE EXIT     LGDXT                *      80 328130
                         *-------------------------------------------*      80 328140
                         *                                           *      80 328150
0E5A 0 0000              LGDEC DC      *-*       RETURN ADDRESS               80 328160
                         *                                                    80 328170
0E5B 1 74FF 0E15               MDX  L  LOGWC,-1  ADJUST WORD COUNT            80 328180
0E5D 1 4C10 0E68         LGD1  BSC  L  LGD2,-    BRANCH ON SNGL PREC          80 328190
0E5F 0 1082                    SLT     2         ADJUST HEX/DEC SW            80 328200
0E60 0 003D                    STO     HDSW      SAVE HEX/DEC SW              80 328210
0E61 0 C101                    LD    1 1         FETCH LO-ORDER WORD          80 328220
0E62 0 1890                    SRT     16        SET IN Q REG                 80 328230
0E63 0 C100                    LD    1 0         FETCH HI-ORDER WORD          80 328240
0E64 1 74FF 0E15               MDX  L  LOGWC,-1  ADJUST WORD COUNT            80 328250
0E66 0 7101                    MDX   1 1         ADJUST WORD INDEX            80 328260
0E67 0 7004                    MDX     LG03      BYPASS SNGL PREC OPER        80 328270
0E68 0 1081              LG02  SLT     1         ADJUST HEX/DEC SW            80 328280
0E69 0 0034                    STO     HDSW      SAVE HEX/DEC SW              80 328290
0E6A 0 C100                    LD    1 0         FETCH SINGLE PREC WORD       80 328300
0E68 0 1890                    SRT     16        POSITION IN Q REG            80 328310
0E6C 0 6700 FFC0         LGD3  LDX  L3 CODE      IX3 = CODE TBL ADDRESS       80 328320
0E6E 0 D831                    STO     DPWK1     SAVE THE WORD                80 328330
0E6F 1 4C10 0E75               BSC  L  LGD4,-    BRANCH IF POSITIVE NMBR      80 328340
0E71 0 10A0                    SLT     32        CONVERT NEGATIVE NMBR        80 328350
0E72 0 982D                    SD      DPWK1     *TO POSITIVE NUMBER          80 328360
0E73 0 D82C                    STD     DPWK1     SAVE THE WORD                80 328370
0E74 0 7311                    MDX   3 17        SET IX TO FETCH - SIGN       80 328380
0E75 0 C300              LGD4  LD    3 0         FETCH CODED SPACE/NEG SGN    80 328390
0E76 0 40C2                    BSI     LDAD      BRANCH TO SET IN OUTPUT      80 328400
                         *                                       *            80 328410
                         *     CONVERT ONE WORD TO DECIMAL       *            80 328420
                         *                                       *            80 328430
0E77 1 6700 0EA4               LDX  L3 DECTB     IX3 = DEC CONSTANT TBL       80 328440
0E79 0 6919                    STX   1 LGD8+1    SAVE INDEX REG 1             80 328450
0E7A 0 CB00              LGD5  LDD   3 0         FETCH DECIMAL CONSTANT       80 328460
0E7B 0 D826                    STD     DPWK2     SAVE THE CONSTANT            80 328470
0E7C 0 6500 FFC1               LDX  L1 CODE+1    IX1 = PRNT CODE TBL ADRS     80 328480
0E7E 0 C821              LGD6  LDD     DPWK1     FETCH HEX WORD               80 328490
0E7F 0 9822                    SD      DPWK2     SUB CONSTANT                 80 328500
0E80 1 4C28 0E89               BSC  L  LGD7,+Z   BRANCH ON NEG RESULT          80 328510
0E82 0 881F                    AD      DPWK2     RESTORE THE WORD             80 328520
0E83 0 D81C                    STD     DPWK1     *AFTER SUBTRACTION           80 328530
0E84 0 C81D                    LOD     DPWK2     ADJUST CONSTANT TO           80 328540
0E85 0 8800                    AD    3 0         *NEXT SEQ MOST SIG           80 328550
0E86 0 D81B                    STD     OPWK2      *DIGIT AND SAVE             80 328560
0E87 0 7101                    MDX   1 1         ADJ PRINT CODE ADRS          80 328570
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0E88 0 70F5              MDX     LGD6        REPEAT CK WITH NEXT CONST  80328580
0E89 0 8B00       LGD7   AD    3 0           RESTORE THE WORD           80328590
0E8A 0 D815              STD     DPWK1       *AFTER SUBTRACTION         80328600
0E88 0 C100              LD    1 0           FETCH OUTPUT CODE          80328610
0E8C 0 40AC              BSI     LOAD        BRANCH TO SET IN OUTPUT    80328620
0E8D 0 7302              MDX   3 2           ADJ CONSTANT INDEX         80328630
0E8E 0 C800              LDD   3 0           FETCH NEXT CONSTANT        80328640
0E8F 0 18DD              RTE     16          POSITION TO CK IF DONE     80328650
0E90 1 4C20 0E7A         BSC   L LGD5,Z      BRANCH IF NOT END OF WURD  80328660
                         *                                              80328670
                         *     ONE WORD CONVERTED-SET SPACE IN MESSG *  80328680
                         *                                            *  80328690
0E92 0 6500 0000  LGD8   LDX   L1 *-*        RESTORE IX 1               80328700
0E94 0 7101              MDX    1 1          ADJUST TO NEXT WORD        80328710
0E95 0 C400 FFC0         LD    L CODE        FETCH CODED SPACE          80328720
0E97 0 40A1              BSI     LOAD        SET SPACE IN OUTPUT        80328730
0E98 0 C005              LD      HDSW        FETCH HEX/DEC SWITCH       80328740
0E99 1 74FF 0E15         MDX   L LOGWC,-1    SKIP IF ALL WORDS CMPLT    80328750
0E98 0 7DC1              MDX     LGD1        GO CONVERT NEXT WORD       80328760
                         *                                              80328770
0E9C 1 4C80 0E5A  LGDXT  BSC   I LGDEC       RETURN TO USER             80328780
                         *                                            *  80328790
                         *              CONSTANTS                     *  80328800
                         *                                            *  80328810
0E9E 0 0000       HDSW   DC      0           HEX/DEC SW STORAGE         80328820
0EA0 0 0000 0000  DPWK1  DEC     0           DBL PRECISION WRK STG 1    80328830
0EA2 0 0000 0000  DPWK2  DEC     0           DBL PRECISION WRK STG 2    80328840
                         *                                            *  80328850
                         *     DECIMAL CONVERSION CONSTANT TABLE      *  80328860
                         *                                            *  80328870
0EA4 0 0098 9680  DECT8  DEC     10000000                               80328880
0EA6 0 000F 4240         DEC     1000000                                80328890
0EA8 0 0001 86A0         DEC     100000                                 80328900
0EAA 0 0000 2710         DEC     10000                                  80328910
0EAC 0 0000 03E8         DEC     1000                                   80328920
0EAE 0 0000 0064         DEC     100                                    80328930
0EB0 0 0000 000A         DEC     10                                     80328940
0EB2 0 0000 0001  DECTC  DEC     1                                      80328950
0EB4 0 0000 0000         DEC     0                                      80328960
                         *                                            *  80328970
                         *--------------------------------------------*  80328980
                         *        LG - BAKUP SUBROUTINE               *  80328990
                         *--------------------------------------------*  80329000
                         *                                            *  80329010
                         *     THE PURPOSE OF THIS SUBROUTINE IS TO   *  80329020
                         *     DETERMINE IF THE DIAGNOSTIC MESSAGE    *  80329030
                         *     HAS BEEN SUCCESSFULLY PRINTED. IT      *  80329040
                         *     VERIFIES THE OPERATION BY CHECKING THE *  80329050
                         *     ERROR PARAMETER IN THE I/O LIST OF THE *  80329060
                         *     PRINT CALL.IF THE PARAMETER IS SET TO  *  80329070
                         *     1,THEN OPERATION COMPLETE IS SIGNIFIED *  80329080
                         *     AND THE SUBROUTINE EXITS.              *  80329090
                         *     IF THE PARAMETER IS OTHER THAN 1( OFF  *  80329100
                         *     LINE,NOT READY OR ERROR )AND THE CALL  *  80329110
                         *     WAS ISSUED TO THE MPX 1053 TYPEN RTN,  *  80329120
                         *     THEN BAKUP RETURNS TO LG AT A POINT    *  80329130
                         *     WHERE THE CALL CAN BE REISSUED.IF THE  *  80329140
                         *     PARAMETER IS OTHER THAN 1 AND THE CALL *  80329150
                         *     WAS TO THE MPX 1443 PRNTN ROUTINE,     *  80329160
                         *     THEN BAKUP REINITIALIZES THE OUTPUT    *  80329170
                         *     CODE TABLE AND THE I/O LIST FOR 1053   *  80329180
                         *     OUTPUT.A RETURN IS THEN MADE TO LG     *  80329190
                         *     WHERE A CALL CAN BE MADE TO THE MPX    *  80329200
                         *     1053 TYPEN ROUTINE.BAKUP WILL,ON THE   *  80329210
                         *     NEXT ENTRY,RESTORE THE I/O LIST AND    *  80329220
                         *     OUTPUT TABLE TO THE 1443 IN ANTICIPA-  *  80329230
                         *     TION OF SUCCESSFUL COMPLETION OF THE   *  80329240
                         *     NEXT MPX 1443 PRNTN CALL.              *  80329250
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                         *     IF THE 1053 IS THE OUTPUT DEVICE,AND   *  80329260
                         *     IT IS OFF LINE,THEN BAKUP WILL 1ST     *  80329270
                         *     CALL TYPEN TO PLACE THE DEVICE ON LINE *  80329280
                         *     CALL TYPEN AGAIN TO OUTPUT THE MESSAGE *  80329290
                         *     AND FINALLY CALL TYPEN TO TAKE THE     *  80329300
                         *     1053 OFF LINE AGAIN.IN THIS MANNER     *  80329310
                         *     SYSTEMS WITH A SINGLE 1053 CAN BE      *  80329320
                         *     ACCOMODATED. IT SHOULD BE NOTED THAT   *  80329330
                         *     THE CALL TO PLACE THE 1053 ON OR OFF   *  80329340
                         *     LINE APPLIES TO THE 1ST TYPEWRITER     *  80329350
                         *     ONLY.                                  *  80329360
                         *                                            *  80329370
                         *                  CALLING SEQUENCE          *  80329380
                         *                                            *  80329390
                         *                  BSI L BAKUP               *  80329400
                         *                                            *  80329410
                         *     CALLED ROUTINES                        *  80329420
                         *                                            *  80329430
                         *         NONE                               *  80329440
                         *                                            *  80329450
                         *     CALLED SUBROUTINES                     *  80329460
                         *                                            *  80329470
                         *         NONE                               *  80329480
                         *                                            *  80329490
                         * POSSIBLE ABORT CONDITIONS                  *  80329500
                         *                                            *  80329510
                         * NONE                                       *  80329520
                         *                                            *  80329530
                         * SUBROUTINE ENTRY    BAKUP                  *  80329540
                         * SUBROUTINE EXITS    BPXT1 - NORMAL         *  80329550
                         *                     BPXT2 - REISSUE TYPEN  *  80329560
                         *                     BPXT3 - PRNTN TO TYPEN *  80329570
                         *                                            *  80329580
                         *--------------------------------------------*  80329590
                         *                                            *  80329600
0EB6 0 0000       BAKUP  DC      *-*         RETURN ADDRESS             80329610
                         *                                              80329620
0EB7 1 74FF 0E1F         MDX   L LISTP+6,-1  SKIP IF UP COMPLETE        80329630
0EB9 0 7015              MDX     BKUP2       OFF LINE OR ERROR BRANCH   80329640
0EBA 1 7400 0EF0  BPXTO  MDX   L OFFLN,0     SKIP IF USING ON LINE 1053 80329650
0EBC 0 700C              MDX     BKP1A       BRANCH-USING OFF LINE 1053 80329660
0EBD 1 7400 0EEF         MDX   L BCKUP,0     SKIP IF NOT BACK UP DEVICE 80329670
0EBF 0 7002              MDX     BKUP1       BACKUP DEVICE-BRANCH       80329680
                         *                                              80329690
0EC0 1 4C80 0EB6  BPXT1  BSC   I BAKUP       RETURN TO USER             80329700
                         *                                              80329710
0EC2 0 6C00 FFDD  BKUP1  STX   L OUTDV       SET FOR 1443 OUTPUT        80329720
0EC4 1 6500 0EF7         LDX   L1 PTRCD      1443 HDNG CODE TABLE       80329730
0EC6 0 1010              SLA     16          CLEAR BACKUP DEVICE        80329740
0EC7 0 D027              STO     BCKUP       * INDICATOR                80329750
0EC8 0 7019              MDX     BKUP4       GO RESTORE CODE TABLES     80329760
0EC9 1 74FF 0EF0  BKP1A  MDX   L OFFLN,-1    SKIP IF RESTORE OFF LINE   80329770
0EC8 0 700E              MDX     BPXT2       BRANCH TO DO PRINT         80329780
0ECC 0 C0E6              LD      DECTC+1     A = CONTROL FOR DEV OFF LN 80329790
0ECD 1 4C00 0DF7         BSC   L LGU9        BRANCH TO TAKE DEV OFF LN  80329800
0ECF 0 7400 FFDD  BKUP2  MDX   L OUTDV,0     SKIP IF 1053 OUTPUT        80329810
0ED1 0 700A              MDX     BKUP3       1443 OUTPUT - BRANCH       80329820
0ED2 1 74FF 0E1F         MDX   L LISTP+6,-1  SKIP IF DEVICE OFF LINE    80329830
0ED4 0 70E5              MDX     BPXTO       NOT OFF LINE,EXIT          80329840
0ED5 1 C400 0995         LD    L K2          FETCH CONSTANT 2           80329850
0ED7 0 D018              STO     OFFLN       SET OFF LINE INDICATOR     80329860
0ED8 0 C018              LD      OLPRM       A = CONTROL FOR DEV ON LIN 80329870
0ED9 0 70F3              MDX     BKUP2-2     BRANCH TO PUT DEV ON LINE  80329880
                                                                        80329890
0EDA 1 4C00 0DED  BPXT2  BSC   L LG08        RE-ISSUE TYPEN CALL        80329900
                         *                                              80329910
0EDC 0 6812              BKUP3 STX     BCKUP       SET THE BACKUP INDICATUR 80329920
0EDD 0 1010              SLA     16          SET OUTPUT DEVICE IND      80329930
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0EDE 0 D400 FFDD        STO  L  OOTDV      * FDR 1053 OUTPUT          80329940
0EE0 1 6500 0EF2        LDX  L1 TYPCD      1053 HDNG CODE TABLE       80329950
0EE2 0 62FB        8KOP4 LDX   2 -5        NM8R OF WORDS TO MOVE      80329960
0EE3 0 C100              LD    1 0        FETCH HEADING CODE         80329970
0EE4 0 D600 FF6F         STD   L2 PHDNG+5 STORE IN HIGH CORE AREA    80329980
0EE6 0 7101              MDX   1 1        STORE INDEX + 1            80329990
0EE7 0 7201              MDX   2 1        MOVE IX + 1-SKIP ON 0      80330000
0EE8 0 70FA              MDX     BKOP4+1  CONTINOE MOVE OP            80330010
0EE9 1 7400 0EEF         MDX   L BCKOP,0  SKIP IF NOT 8ACKUP DEV     80330020
0EEB 0 7001              MDX     BPXT3    1053 8ACKOP-BRANCH         80330030
0EEC 0 70D3              MDX     BPXT1    NOT BACKOP 8RANCH          80330040
0EED 1 4C00 0DA5   8PXT3 BSC   L  LGOO     EXIT TO LG-RECALL          80330050
                         *                                 *        80330060
                         *          CONSTANTS              *        80330070
                         *                                 *        80330080
0EEF 0 0000        BCKOP DC      0          BACKUP INDICATOR           80330090
0EF0 0 0000        OFFLN DC      0          OFF LINE 1053 INDICATOR    80330100
0EF1 0 0101        OLPRM DC      /0101      PARAM TO POT 1053-1 ON LN  80330110
                         *                                 *        80330120
                         *    1053 CODED HEADING 'CUST ENG'*        80330130
                         *                                 *        80330140
0EF2 0 811E        TYPCD DC      /811E      CR/C                       80330150
0EF3 0 B29A              DC      /B29A       O/S                       80330160
0EF4 0 9E21              DC      /9E21       T/SP                      80330170
0EF5 0 3676              DC      /3676       E/N                       80330180
0EF6 0 1621              DC      /1621       G/SP                      80330190
                         *                                 *        80330200
                         *    1443 CODED HEADING 'COST ENG'*        80330210
                         *                                 *        80330220
0EF7 0 0033        PTRCD DC      /0033      SP/C                       80330230
0EF8 0 1412              DC      /1412       U/S                       80330240
0EF9 0 1300              DC      /1300       T/SP                      80330250
0EFA 0 3525              DC      /3525       E/N                       80330260
0EFB 0 3700              DC      /3700       G/SP                      80330270
                         *                                 *        80330280
                         *                                 *        80330290
                         *                                 *        80330300
                         ***********************************        80330310
                         *      MPXDM - BEGIN ROUTINE      *        80330320
                         ***********************************        80330330
                         *                                 *        80330340
                         *          ** BGIN **             *        80330350
                         *                                 *        80330360
                         *    THIS ROOTINE IS THE 1ST INTERFACE *   80330370
                         *    BETWEEN THE DFT AND MPXDM. THE CALL ON* 80330380
                         *    BGIN BY THE DFT IS A RESOLT OF THE DFT* 80330390
                         *    LOADER BRANCHING TO THE DFT END CARD * 80330400
                         *    ADDRESS.THE DFT CALLS ON BGIN TO   * 80330410
                         *    INFORM MPXDM OF ITS PID AND LOCATION * 80330420
                         *    IN CORE.                           * 80330430
                         *                                       * 80330440
                         *    8GIN WILL PERFORM THE FOLLOWING    * 80330450
                         *    FONCTIONS.                         * 80330460
                         *                                       * 80330470
                         *                                       * 80330480
                         *    1.STORE THE PID ADDRESS IN LOC DFTID. * 80330490
                         *    2.COMPUTE AND STORE THE DFT MLSCF  * 80330500
                         *      ADDRESS IN LOC DFTCF.            * 80330510
                         *    3.COMPOTE AND STORE THE DFT EDIT   * 80330520
                         *      ADDRESS IN LOC EDITA.            * 80330530
                         *    4.SET THE DFT ON-LINE INDICATOR TO * 80330540
                         *      HEX 8000.                        * 80330550
                         *              CALLING SEQOENCE         * 80330560
                         *                                       * 80330570
                         *              8SI I BEGIN              * 80330580
                         *              DC    PID                * 80330590
                         *              C(BEGIN) = BGIN          * 80330600
                         *              PID = ADDRESS OF DFT PID * 80330610
```



```
                         *                                       * 80330620
                         *    CALLED ROUTINES                    * 80330630
                         *                                       * 80330640
                         *        NONE                           * 80330650
                         *                                       * 80330660
                         *    CALLED S08RDOTINES                 * 80330670
                         *                                       * 80330680
                         *        NONE                           * 80330690
                         *                                       * 80330700
                         * POSSI8LE A8DRT CONDITIONS             * 80330710
                         *                                       * 80330720
                         * NONE                                  * 80330730
                         *                                       * 80330740
                         * ROUTINE ENTRY    BEGIN                * 80330750
                         * ROOTINE EXIT     BEGIN3               * 80330760
                         *                                       * 80330770
                         ***************************************** 80330780
                         *                                       * 80330790
                         *                                       * 80330800
0EFC 0 0000        BGIN  DC      *-*        PID ADDRS ON ENTRY         80330810
                         *                                              80330820
0EFD 0 6500 FFD2         LDX   L1 EDITA     SET MPXDM COMN INDEX       80330830
0EFF 0 C11E              LD     1 STATS-EOITA SET 8EGIN ROOTINE         80330840
0F00 0 E81C              OR      K0400       *STATUS 8IT -              80330850
0F01 0 D11E              STO     1 STATS-EDITA   *8IT 5                 80330860
0F02 1 C480 0EFC         LD    I  BGIN       FETCH PID ADDRESS          80330870
0F04 0 D001              STO      *+1                                   80330880
0F05 0 6700 0000         LDX   L3 *-*        SET IX3 = PID AODRS        80330890
0F07 0 6F00 FFF2         STX   L3 DFTID      STORE IN HI-CORE AREA      80330900
0F09 0 730A              MDX    3 10         ADJSUT TO MLSCF ADDRS      80330910
0F0A 0 6F00 FFF1         STX   L3 OFTCF      STORE IN HI-CORE AREA      80330920
0F0C 0 7301        BGIN1 MDX    3 1          INCR MLSCF ADDRESS         80330930
0F0D 0 C300              LD     3 0         FETCH MLSCF ENTRY          80330940
0F0E 1 F400 091C         EOR   L  TERM       CK FOR TERMINATOR          80330950
0F10 0 4820              BSC      Z          SKIP IF TERMINATDR         80330960
0F11 0 70FA              MDX      BGIN1      8RANCH-SEARCH NEXT WD      80330970
0F12 1 C400 0C45         LD    L  K8000      FETCH CONSTANT 8000 HEX    80330980
0F14 0 D305        BGIN2 STO    3 5          SET ON LINE INDICATDR      80330990
0F15 0 7307              MDX    3 7          INCR TO EDIT AREA ADDRS    80331000
0F16 0 6F00 FFD2         STX   L3 EDITA      STORE IN HI-CORE AREA      80331010
0F18 0 C11E              LD     1 STATS-EDITA CLEAR 8EGIN                80331020
0F19 0 F003              EOR     K0400       *ROUTINE STATUS            80331030
0F1A 0 D11E              STO     1 STATS-EDITA   *BIT - BIT 5           80331040
                         *                                              80331050
0F18 1 4C80 0F1E   BGIN3 8SC   I  MPDM1      RETURN TO MPXDM CTRL       80331060
0F10 0 0400        K0400 DC      /0400       CONSTANT HEX 0400          80331070
                         *                                 *        80331080
                         ***************************************** 80331090
                         * MPXDM - DFT D8JECT DECK/PATCH CARD LDADER * 80331100
                         ***************************************** 80331110
                         *                                       * 80331120
                         *          ** MPDM1 **                  * 80331130
                         *                                       * 80331140
                         *    ROUTINE MPDM1 ID THE DFT OBJECT DECK * 80331150
                         *    AND PATCH CARD LOADER. IT IS CALLED  * 80331160
                         *    8Y THE MONITOR CONTRDL ROOTINE(MCTRL) * 80331170
                         *    FOLLOWING MPXDM INTIALIZATION,AND    * 80331180
                         *    EACH TIME THE OPERATOR REQOESTS THE  * 80331190
                         *    LOADING OF A NEW DFT.                * 80331200
                         *                                         * 80331210
                         *    THE FUNCTIONS OF MPDM1 ARE AS FOLLOWS * 80331220
                         *                                         * 80331230
                         *    1.CALL READ1 TO INPOT PROGRAM CARDS. * 80331240
                         *    2.CALL BYPE SUBROOTINE TO DETERMINE  * 80331250
                         *      IF THE CARD IS A 12-4 OBJECT CARD  * 80331260
                         *      OR A DFT PATCH CARD.               * 80331270
                         *    3.CONVERT 12-4 OBJECT CARDS FROM CARD * 80331280
                         *      TO CORE IMAGE.                     * 80331290
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*     4.RELOCATE THE DFT TO THE VARIABLE    *      80331300
*       CORE AREA.                          *      80331310
*     6.REPLACE ALL DFT OFF-LINE TRANSFER   *      80331320
*       VECTORS WITH THEIR ON-LINE COUNTER  *      80331330
*       PART.                               *      80331340
*     7.WHEN THE END CARD IS READ,VERIFY    *      80331350
*       THAT THE DFT IS ON-LINE COMPATABLE  *      80331360
*       BY CHECKING ITS COMPATABILITY WORD.  *      80331370
*     8.VERIFY THATTHE OFF-LINE TRANSFER    *      80331380
*       VECTORS WERE CHANGED.               *      80331390
*     9.EXIT TO THE DFT VIA THE END CARD    *      80331400
*       ADDRESS.                            *      80331410
*                                           *      80331420
*                  CALLING SEQUENCE         *      80331430
*                                           *      80331440
*                  BSI L MPDM1              *      80331450
*                                           *      80331460
*     CALLED ROUTINES                       *      80331470
*                                           *      80331480
*         1. READ1 - CARD INPUT ROUTINE     *      80331490
*         2. ABORT - MPXDM ERROR ABORT RTN. *      80331500
*         3. DFT VIA END CARD ADDRESS.      *      80331510
*                                           *      80331520
*     CALLED SUBRUUTINES                    *      80331530
*                                           *      80331540
*         1. TYPE - DETERMINE CARD TYPE.    *      80331550
*         2. CKADR- CK FOR EXCEEDING        *      80331560
*                 AVAILABLE CURE.           *      80331570
*                                           *      80331580
* POSSIBLE ABORT CONDITIONS                 *      80331590
*                                           *      80331600
*  CODE  *            CONDITION             *      80331610
*                                           *      80331620
*  E021  *  MPDM1 HAS BEEN ENTERED FOR      *      80331630
*           EXECUTION BUT WAS NOT CALLED.   *      80331640
*  E022  *  CHECKSUM ERROR ON LAST CARD READ*      80331650
*  E023  *  DFT LOADED IS NOT RELOCATABLE   *      80331660
*  E024  *  OFF-LINE TRANSFER VECTORS WERE  *      80331670
*           NOT CHANGED INCORRECT DFT       *      80331680
*           ASSEMBLY.                       *      80331690
*  E025  *  DFT NOT COMPATABLE WITH ON LINE *      80331700
*           OPERATION.                      *      80331710
*                                           *      80331720
*  ROUTINE ENTRY   MPDM1                    *      80331730
*  ROUTINE EXIT    DM10Y                    *      80331740
*                                           *      80331750
*********************************************      80331760
*                                           *      80331770
0F1E 0 0000   MPDM1 DC      *-*       RETURN ADDRESS          80331780
              *                                                80331790
0F1F 1 6500 0FCD    LDX  L1 CDCNT     SET                    80331800
0F21 0 6600 FFD2    LDX  L2 EDITA       REFERENCE            80331810
0F23 1 6700 1233    LDX  L3 EXTAD             INDEXES        80331820
0F25 0 C105         LD    1 CK1-CDCNT FETCH MPDM1 CK WORD    80331830
0F26 0 D306         STO   3 A8M3-EXTAD  SAVE IN ABORT MSG     80331840
0F27 0 F207         EOR   2 LCLID-EDITA TEST IF = CALL ID    80331850
0F28 1 4C18 0F30    BSC  L  DM10A,&-    BRANCH IF CORRECT      80331860
0F2A 0 C300         LD    3 EXTAD-EXTAD FETCH ERR ABORT EXIT 80331870
0F2B 0 D206         STO   2 ABRTX-EDITA STORE IN CUMN AREA   80331880
              *                                                80331890
0F2C 0 4480 FFE7    BSI  I  ABORT     ABORT EXIT             80331900
0F2E 0 E021         DC      /E021     MID-MPDM1 XEQ-NOT CALLED 80331910
0F2F 0 0002         DC      2         WORD COUNT             80331920
              *                                                80331930
0F30 0 1010   DM10A SLA     16        CLEAR CARD COUNTER     80331940
0F31 0 D100         STO   1 CDCNT-CDCNT                      80331950
0F32 0 D104         STO   1 VCTCK-CDCNT  CLR VECTOR SWAP IND 80331960
0F33 0 D207         STO   2 LCLID-EDITA  CLEAR CHECK WORD    80331970
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0F34 0 D301         STU   3 DTABT-EXTAD  CLR DFT ABORTED IND  80331980
0F35 1 7401 0FCD DM10B MDX  L CDCNT,1     INCR CARD COUNT      80331990
0F37 1 4400 11C7 DM10C BSI  L READ1       BRANCH TO READ CARD  80332000
0F39 1 4400 0F0C       BSI  L TYPE        CALL CARD TYPE ROUTINE 80332010
0F3B 0 70FB            MDX    DM10C       HEX CARD RETURN. GO  80332020
                    *                     *READ NEXT CARD. THE 80332030
                    *                     *TYPE ROUTINE WILL   80332040
                    *                     *RETURN TO THE NEXT  80332050
                    *                     *SEQUENTIAL LOCATION 80332060
                    *                     *ON 12-4 CARD TYPES. 80332070
                    *                                          80332080
                    *          UNPACK DATA                     80332090
                    *                                          80332100
0F3C 0 6500 FF70       LDX  L1 INOUT      XR1 = IN AREA FETCH  80332110
0F3E 0 62B8            LDX   2 -72        XR2 = COLUMN COUNT   80332120
0F3F 0 6700 FF70       LDX  L3 INOUT      XR3 = IN AREA STORE  80332130
0F41 0 C100         DM10E LD     1 0       FETCH 1ST COL OF GROUP 80332140
0F42 0 18D4            RTE     20         POSITION IN Q        80332150
0F43 0 C101            LD     1 1         FETCH 2ND COL OF GROUP 80332160
0F44 0 18CC            RTE     12         UNPACKS 1ST WORD     80332170
0F45 0 D300            STO    3 0         STORE 1ST WORD OF GROUP 80332180
0F46 0 18C8            RTE     8          POSITION REMAIN CHARACT 80332190
0F47 0 C102            LD     1 2         FETCH 3RD COL OF GROUP 80332200
0F48 0 18C8            RTE     8          UNPACKS 2ND WORD     80332210
0F49 0 D301            STO    3 1         STORE 2ND WORD OF GROUP 80332220
0F4A 0 18CC            RTE     12         POSITION REMAIN CHARACT 80332230
0F4B 0 C103            LD     1 3         FETCH 4TH COL OF GROUP 80332240
0F4C 0 18C4            RTE     4          UNPACKS 3RD WORD     80332250
0F4D 0 D302            STO    3 2         STORE 3RD WORD OF GROUP 80332260
0F4E 0 7104            MDX    1 4         ADJ FETCH XR TO NEXT GRP 80332270
0F4F 0 7303            MDX    3 3         ADJ STORE XR TO NEXT GRP 80332280
0F50 0 7204            MDX    2 4         ADJ COL XR-SKIP ON 0 80332290
0F51 0 70EF            MDX    DM10E       BRANCH-UNPACK NEXT GROUP 80332300
                    *                                          80332310
                    *          PERFORM CHECKSUM                80332320
                    *                                          80332330
0F52 0 62CA            LDX   2 -54        SET WORD INDEX       80332340
0F53 0 C079            LD     CDCNT       FETCH CARD COUNT     80332350
0F54 1 D400 1238       STO  L ABM2        SAVE IN ABORT MESSAGE 80332360
0F56 0 8600 FFA6    DM10F A    L2 INOUT+54 SUM WORDS            80332370
0F58 0 4802            BSC     C          SKIP IF NOT CARRY    80332380
0F59 0 8075            A       CON1       ADD IN CARRY         80332390
0F5A 0 7201            MDX    2 1         INCR WORD XR-SKIP ON 0 80332400
0F5B 0 70FA            MDX     DM10F      CONTINUE SUM CHECK   80332410
0F5C 0 9072            S       CON1       SUB 1 FOR 0 CK SUM   80332420
0F5D 1 4C18 0F65       BSC  L  DM10G,+-   BRANCH ON 0 CK SUM   80332430
0F5F 1 D400 1239       STO  L  ABM3       SAVE IN ABORT MESSAGE 80332440
                    *                                          80332450
0F61 0 4480 FFE7       BSI  I  ABORT      ABORT EXIT           80332460
0F63 0 E022            DC      /E022      MID-CHECKSUM ERROR   80332470
0F64 0 0002            DC      2          WORD COUNT           80332480
                    *                                          80332490
                    *     CHECK FOR RELOCATABLE PROG ON CARD 1 * 80332500
                    *                                          80332510
0F65 0 6500 FF70    DM10G LDX  L1 INOUT    INITIALIZE FETCH IX  80332520
0F67 0 C065            LD      CDCNT      FETCH CARD COUNT     80332530
0F68 0 1801            SRA     1          REMOVE BIT 15        80332540
0F69 1 4C20 0F73       BSC  L  DM10H,Z    BRANCH IF NOT 1ST CD 80332550
0F6B 0 C102            LD     1 2         FETCH ABS/REL WORD   80332560
0F6C 0 1809            SRA     9          POSITION RELOCATE BIT 80332570
0F6D 1 4C04 0F35       BSC  L  DM10B,E    BRANCH IF RELOCATABLE 80332580
                    *                                          80332590
0F6F 0 4480 FFE7       BSI  I  ABORT      ABORT EXIT           80332600
0F71 0 E023            DC      /E023      MID-PROG NOT RELOCATABLE 80332610
0F72 0 0000            DC      0          WORD COUNT           80332620
                    *                                          80332630
0F73 0 C102         DM10H LD     1 2       FETCH WORD COUNT     80332640
0F74 0 1008            SLA     8          REMOVE UNWANTED BITS 80332650
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OF75 0 1808              SKA    8          REPOSITION WORD COUNT     80332660
OF76 0 D059              STO    WRDCT      SAVE WORD COUNT           80332670
OF77 1 4C18 OFAC         BSC  L DM10D,+-   BRANCH IF END CARD         80332680
OF79 0 C100              LD     1 0        FETCH DATA ADDRESS        80332690
OF7A 0 8053              A      RELFC      ADD RELOCATE FACTOR       80332700
OF7B 0 D100              STO    1 0        SAVE ADDRESS              80332710
OF7C 0 6680 FF70         LDX    I2 INOUT   SET IX2 = ADDRESS         80332720
OF7E 1 4400 1019   DM10J BSI  L CKADR      CALL ADDRS CK ROUTINE     80332730
                   *                                                80332740
                   *     RELOCATE PROGRAM TO PROPER CORE AREA  *    80332750
                   *                                              * 80332760
OF80 0 C109              LD     1 9        FETCH DATA WORD           80332770
OF81 0 D200              STO    2 0        RELOCATE IN CORE          80332780
OF82 0 7201              MDX    2 1        INCREMENT STORE IX        80332790
OF83 0 7101              MDX    1 1        INCREMENT FETCH IX        80332800
OF84 1 74FF OFD0         MDX  L WRDCT,-1   SKIP WHEN ALL STORED      80332810
OF86 0 70F7              MDX    DM10J      CONTINUE RELOCATION       80332820
                   *                                                80332830
                   *     ADD RELOCATION FACTOR TO PROGRAM WORDS*    80332840
                   *                                              * 80332850
OF87 0 61FA              LDX    1 -6       IX1 = NMBR CTRL WORDS     80332860
OF88 0 6680 FF70         LOX    I2 INOUT   IX2 = RELOC ADDRESS       80332870
OF8A 0 6308        DM10K LDX    3 8        IX3 = BITS/CTRL WORD      80332880
OF8B 0 C500 FF79         LD     L1 INOUT+9 FETCH CONTROL WORD        80332890
OF8D 0 18D0              RTE    16         PUT IT IN Q REG           80332900
OF8E 0 1010        DM10L SLA    16         CLEAR A REG               80332910
OF8F 0 1082              SLT    2          POSITION PAIR CTL BITS    80332920
OF90 1 4C18 OFA6         BSC  L DM10T,+-   BRANCH ON ABS WORD       80332930
OF92 1 4C04 OFA3         BSC  L DM10R,E    BRANCH ON REL WORD        80332940
                   *                                              * 80332950
                   *     BITS = 10. MODIFY INTERFACE VECTORS   *    80332960
                   *                                              * 80332970
OF94 0 6B09              STX    3 DM10N+1  SAVE IX 3                 80332980
OF95 0 6300              LDX    3 0        SET VECTOR SEARCH IX      80332990
OF96 0 C03C        DM10M LD     OFVEC      FETCH VECTOR WORD         80333000
OF97 0 B200              CMP    2 0        SEARCH FOR VECTOR         80333010
OF98 0 1000              NOP                                         80333020
OF99 0 7006              MDX    DM10P      BRANCH-NOT FOUND          80333030
OF9A 0 6836              STX    VCTCK      SET VECTOR CK WORD        80333040
OF9B 1 C700 OFD5         LD   L3 CNVEC      FETCH ON LINE VECTOR      80333050
OF9D 0 6700 0000   DM10N LDX  L3 0          RESTORE IX 3              80333060
OF9F 0 7005              MOX    DM10S      BRANCH TO UPDATE PROG     80333070
OFA0 0 7301        DM10P MDX    3 1        INCREMENT SEARCH IX       80333080
OFA1 0 802D              A      CON1       INCR EXPECTED VECTOR      80333090
OFA2 0 70F4              MDX    DM10M+1    CONTINUE SEARCH           80333100
                   *                                                80333110
                   *     BITS = 01. ADD RELOC FACTOR TO WORD.  *    80333120
                   *                                              * 80333130
OFA3 0 C200        DM10R LO     2 0        FETCH DATA WORD           80333140
OFA4 0 8029              A      RELFC      ADD RELOCATION FACTOR     80333150
OFA5 0 D200        DM10S STO    2 0        UPDATE PROGRAM            80333160
OFA6 0 7201        DM10T MDX    2 1        UPDATE STORAGE IX         80333170
OFA7 0 73FF              MDX    3 -1       SKIP ON END CTRL WD       80333180
OFA8 0 70E5              MOX    DM10L      GO CK NEXT PAIR OF BITS   80333190
OFA9 0 7101              MDX    1 1        SKIP ON ALL CTRL WDS      80333200
OFAA 0 70DF              MDX    DM10K      BRANCH FOR NEXT CTRL WD   80333210
OFAB 0 7089              MDX    DM10B      BRANCH TO READ NEXT CARD  80333220
                   *                                              * 80333230
                   *          SERVICE END CARD                    * 80333240
                   *                                              * 80333250
OFAC 0 C103        DM10D LD     1 3        FETCH XFER ADDRESS        80333260
OFAD 0 8020              A      RELFC      ADD RELOCATION FACTOR     80333270
OFAE 0 D01D              STO    DM10Y&1    SET IN EXIT               80333280
OFAF 0 C021              LD     VCTCK      FETCH VECTOR CK WORD      80333290
OFB0 1 4C20 OF86         BSC  L DM10V,Z    BRANCH IF VCTRS SWAPED    80333300
                   *                                                80333310
OFB2 0 4480 FFE7         BSI  I ABORT      ABORT EXIT                80333320
OFB4 0 E024              DC     /E024      MID-INTFACE VECTS OFF LINE 80333330
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OFB5 0 0000              DC     0          WORD COUNT                80333340
                   *                                              * 80333350
                   *     CHECK DFT FOR ON-LINE COMPATABILITY   *    80333360
                   *                                              * 80333370
OFB6 0 6780 FFF4   DM10V LDX  I3 DFTBG      IX3 # DFT LOAD ADDRESS    80333380
OFB8 0 730A              MDX    3 10       SET TO MLSCF FIELD        80333390
OFB9 0 C300        DM10W LD     3 0        FETCH MLSCF ENTRY         80333400
OFBA 1 F400 091C         EOR  L TERM       TEST FOR TERMINATOR       80333410
OFBC 1 4C18 OFC0         BSC  L DM10X,&-   BRANCH ON TERMINATOR      80333420
OFBE 0 7301              MDX    3 1        INCREMENT SEARCH IX       80333430
OFBF 0 70F9              MDX    DM10W      LOOP TO TEST NEXT ENTRY   80333440
OFC0 0 C306        DM10X LD     3 6        FETCH DFT COMPAT WORD     80333450
OFC1 0 D400 FFE0         STO  L DFTCW      SAVE IN HIGH CORE AREA    80333460
OFC3 0 F010              EOR    CMPAT      TEST FOR COMPATABILITY    80333470
OFC4 0 1001              SLA    1          CLEAR OUT BIT 0           80333480
OFC5 1 4C18 OFCB         BSC  L DM10Y,+-   BRANCH IF COMPATABLE       80333490
                   *                                                80333500
OFC7 0 4480 FFE7         BSI  I ABORT      ABORT EXIT                80333510
OFC9 0 E025              DC     /E025      MID-OFT NOT ON LINE COMPAT 80333520
OFCA 0 0000              DC     0          WORD COUNT                80333530
                   *                                                80333540
OFC8 0 4C00 0000   DM10Y BSC  L *-*        BRANCH TO DFT             80333550
                   *                                              * 80333560
                   *              CONSTANTS                       * 80333570
                   *                                              * 80333580
OFC0 0 0000        CDCNT DC     0          CARD COUNTER              80333590
OFCE 0 0000        RELFC DC     0          ACTIVE RELOC FACTOR       80333600
OFCF 0 0001        CON1  DC     1          CONSTANT DEC 1            80333610
OF00 0 0000        WRDCT DC     0          CARD DATA WORD COUNTER    80333620
OFD1 0 0000        VCTCK DC     0          VECTOR CHECK WORD         80333630
OFD2 0 1001        CK1   DC     /1001      MPDM1 CHECK WORD          80333640
OFD3 0 012C        OFVEC DC     /012C      1ST VECTOR ADDRESS        80333650
OFD4 0 0002        CMPAT DC     2          COMPATABILITY IND         80333660
                   *                                                80333670
                   *     ON LINE INTERFACE VECTOR ADDRESSES         80333680
                   *                                                80333690
OFD5 0 FFF5        ONVEC DC     /FFF5      BEGIN                     80333700
OFD6 0 FFF6              DC     /FFF6      START                     80333710
OFD7 0 FFF7              DC     /FFF7      END                       80333720
OFD8 0 FFF8              DC     /FFF8      LOG                       80333730
OFD9 0 FFF9              DC     /FFF9      ERROR                     80333740
OFDA 0 FFFA              DC     /FFFA      REQDV                     80333750
OFD8 0 FFF8              DC     /FFF8      RELDV                     80333760
                   *                                              * 80333770
                   *----------------------------------------------* 80333780
                   *       MPDM1 - TYPE SUBROUTINE                * 80333790
                   *----------------------------------------------* 80333800
                   *                                              * 80333810
                   *     THIS SUBROUTINE IS USED TO DETERMINE   * 80333820
                   *     THE TYPE OF DATA CARD JUST READ IF THE* 80333830
                   *     CARD READ WAS A HEX PATCH CARD, TYPE   * 80333840
                   *     WILL CALL ON THE HEX ROUTINE TO        * 80333850
                   *     PROCESS IT,AND THEN RETURN TO THE      * 80333860
                   *     CALLER AT THE ADDRESS HELD IN LOCATION* 80333870
                   *     TYPE.IF THE CARD READ WAS A 12-4       * 80333880
                   *     OBJECT CARD ,TYPE WILL RETURN TO THE   * 80333890
                   *     CALLER AT THE ADDRESS+1 HELD IN LOC.   * 80333900
                   *     TYPE.IF ANY OTHER TYPE OF CARD IS      * 80333910
                   *     DETECTED (8-8 BINARY,EDIT,CONTROL OR   * 80333920
                   *     BLANK),TYPE WILL CALL ON THE ABORT     * 80333930
                   *     ROUTINE.                               * 80333940
                   *                                            * 80333950
                   *                CALLING SEQUENCE            * 80333960
                   *                                            * 80333970
                   *                BSI   TYPE                  * 80333980
                   *                                            * 80333990
                   *     CALLED ROUTINES                        * 80334000
                   *                                            * 80334010
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                        *         1. HEX   - HEX TO BINARY CONVERT  *  8033402 0
                        *         2. ABORT - MPXDM ERROR ABORT RTN  *  8033403 0
                        *                                           *  8033404 0
                        *     CALLED SUBROUTINES                    *  8033405 0
                        *                                           *  8033406 0
                        *         NONE                              *  8033407 0
                        *                                           *  8033408 0
                        * POSSIBLE ABORT CONDITIONS                 *  8033409 0
                        *                                           *  8033410 0
                        *  CODE  *            CONDITION             *  8033411 0
                        *                                           *  8033412 0
                        *  E026  *  BLANK CARD WAS READ             *  8033413 0
                        *  E027  *  8-8 BINARY OR BLANK CARD READ   *  8033414 0
                        *  E028  *  EDIT CARD READ-NO DFT END CARD. *  8033415 0
                        *  E029  *  CONTROL CARD READ-NODFT END CD. *  8033416 0
                        *                                           *  8033417 0
                        * SUBROUTINE ENTRY    TYPE                  *  8033418 0
                        * SUBROUTINE EXIT     TYPEX IF HEX CARD     *  8033419 0
                        *                     BYPEY IF 12-4 CARD    *  8033420 0
                        *                                           *  8033421 0
                        *-------------------------------------------*  8033422 0
                        *                                           *  8033423 0
0FDC 0 0000             TYPE  DC      *-*         RETURN ADDRESS      8033424 0
                        *                                              8033425 0
0FDD 0 C400 FF70              LD    L INOUT       FETCH 1ST CARD ENTRY  8033426 0
0FDF 1 4C20 0FF2              BSC   L TYPE2,Z     BRANCH IF NOT ZERO    8033427 0
0FE1 0 C0EB                   LD      CDCNT       FETCH CARD COUNT      8033428 0
0FE2 0 1801                   SRA     1           REMOVE BIT 15         8033429 0
0FE3 0 4818                   BSC     +-          SKIP IF NOT 1ST CARD  8033430 0
0FE4 0 7004                   MDX     TYPE1       BRANCH TO CONTINUE CK 8033431 0
                        *                                              8033432 0
0FE5 0 4480 FFE7              BSI   I ABORT       ABORT EXIT            8033433 0
0FE7 0 E026                   DC      /E026       MID-BLANK CARD READ   8033434 0
0FE8 0 0000                   DC      0           WORD COUNT            8033435 0
                        *                                              8033436 0
0FE9 0 C400 FF71        TYPE1 LD    L INOUT+1     FETCH 2ND CARD ENTRY  8033437 0
0FEB 0 1008                   SLA     8           POSITION TO CK 8-8    8033438 0
0FEC 0 4820                   BSC     Z           SKIP IF ZERO          8033439 0
0FED 0 7024                   MDX     TYPE5       BRANCH-12/4 TYPE      8033440 0
                        *                                              8033441 0
0FEE 0 4480 FFE7              BSI   I ABORT       ABORT EXIT            8033442 0
0FF0 0 E027                   DC      /E027       MID-8/8 DFT OBJECT DECK 8033443 0
0FF1 0 0000                   DC      0           WORD COUNT            8033444 0
                        *                                              8033445 0
0FF2 1 F400 0C45        TYPE2 EOR   L K8000       CHECK FOR PATCH CARD  8033446 0
0FF4 0 4820                   BSC     Z           SKIP IF PATCH CARD    8033447 0
0FF5 0 700A                   MDX     TYPE3       BRANCH-CONTINUE CK    8033448 0
0FF6 0 6821                   STX     PATCH       SET PATCH CARD INDCTR 8033449 0
0FF7 0 6101                   LDX   1 1           SET CARD TYPE 'PATCH' 8033450 0
0FF8 1 6D00 1238              STX   L1 A8M2       *IN ABORT MESSAGE     8033451 0
0FFA 1 4400 114A              BSI   L HEX         CALL ON HEX SUBRTN    8033452 0
0FFC 0 1010                   SLA     16          CLEAR PATCH           8033453 0
0FFD 0 D01A                   STO     PATCH       *CARD INDICATOR       8033454 0
0FFE 1 4C80 0FDC        TYPEX BSC   I TYPE        RETURN TO USER        8033455 0
                        *                                              8033456 0
1000 0 C400 FF70        TYPE3 LD    L INOUT       FETCH 1ST COLUMN      8033457 0
1002 0 F013                   EOR     K8100       CK IF EDIT CARD       8033458 0
1003 1 4C20 1009              BSC   L TYPE4,Z     BRANCH IF NOT EDIT    8033459 0
                        *                                              8033460 0
1005 0 4480 FFE7              BSI   I ABORT       ABORT EXIT            8033461 0
1007 0 E028                   DC      /E028       MID-EDIT READ-NO END CARD 8033462 0
1008 0 0000                   DC      0           WORD COUNT            8033463 0
                        *                                              8033464 0
1009 0 C400 FF70        TYPE4 LD    L INOUT       FETCH 1ST COLUMN      8033465 0
100B 0 F00B                   EOR     K4420       CK IF CONTROL CARD    8033466 0
100C 1 4C20 1012              BSC   L TYPE5,Z     BRANC IF NOT CONTROL  8033467 0
                        *                                              8033468 0
100E 0 4480 FFE7              BSI   I ABORT       ABORT EXIT            8033469 0
```



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1010 0 E029                   DC      /E029       MID-CTRL READ-NO END CARD 8033470 0
1011 0 0000                   DC      0           WORD COUNT            8033471 0
                        *                                              8033472 0
1012 1 7401 0FDC        TYPE5 MDX   L TYPE,1      ADJUST EXIT-12/4 CARD 8033473 0
1014 1 4C80 0FDC        TYPEY BSC   I TYPE        RETURN TO USER        8033474 0
                        *                                              8033475 0
                        *              CONSTANTS                    *  8033476 0
                        *                                           *  8033477 0
1016 0 8100             K8100 DC      /8100       CONSTANT HEX 8100     8033478 0
1017 0 4420             K4420 DC      /4420       CONSTANT HEX 4420     8033479 0
1018 0 0000             PATCH DC      0           PATCH CARD INDICATOR  8033480 0
                        *                                           *  8033481 0
                        *-------------------------------------------*  8033482 0
                        *        MPDM1 - CKADR SUBROUTINE           *  8033483 0
                        *-------------------------------------------*  8033484 0
                        *                                           *  8033485 0
                        *     THIS SUBRUUTINE IS CALLED BY MPDM1 AND*  8033486 0
                        *     THE HEX SUBROUTINE.ITS FUNCTION IS TO *  8033487 0
                        *     VERIFY THAT THE NEXT ADDRESS INTO     *  8033488 0
                        *     WHICH DFT DATA IS TO BE STORED DOES   *  8033489 0
                        *     NOT EQUAL OR EXCEED THE LIMIT ADDRESS *  8033490 0
                        *     CONTAINED IN LOCATION 0MBGN.          *  8033491 0
                        *                                           *  8033492 0
                        *                CALLING SEQUENCE           *  8033493 0
                        *                                           *  8033494 0
                        *                BSI   CKADR                *  8033495 0
                        *                IX 2 = ADDRESS TO CHECK    *  8033496 0
                        *                                           *  8033497 0
                        *     CALLED ROUTINES                       *  8033498 0
                        *                                           *  8033499 0
                        *         1. ABORT - MPXDM ERROR ABORT RTN  *  8033500 0
                        *                                           *  8033501 0
                        *     CALLED SUBROTUINES                    *  8033502 0
                        *                                           *  8033503 0
                        *         NONE                              *  8033504 0
                        *                                           *  8033505 0
                        * POSSIBLE ABORT CONDITIONS                 *  8033506 0
                        *                                           *  8033507 0
                        *  CODE  *            CONDITION             *  8033508 0
                        *                                           *  8033509 0
                        *  E030  *  ADDRESS EXCEEDS SPECIFIED LIMIT.*  8033510 0
                        *                                           *  8033511 0
                        * SUBROUTINE ENTRY    CKADR                 *  8033512 0
                        * SUBROUTINE EXIT     CKAD1                 *  8033513 0
                        *                                           *  8033514 0
                        *-------------------------------------------*  8033515 0
                        *                                           *  8033516 0
1019 0 0000             CKADR OC      *-*         RETURN ADDRESS        8033517 0
101A 0 6A11                   STX   2 HOLD        ENTRY -STORE ADDRS    8033518 0
101B 0 C400 FFF3              LD    L DMBGN       FETCH LIMIT ADDRS     8033519 0
101D 1 D400 1239              STO   L A8M3        SAVE IN ABORT MESSAGE 8033520 0
101F 0 900C                   S       HOLD        CHECK IF ADDRESS OK   8033521 0
1020 1 4CB0 1019        CKAD1 BSC   I CKADR,Z-    RETURN TO CALLER IF   8033522 0
                        *                         * ADDRESS IN LIMITS   8033523 0
1022 0 C400 FFF3              LD    L DMBGN       FETCH UPPER LIMIT ADDRS 8033524 0
1024 0 9400 FFF4              S     L DFTBG       DETERMINE AVAILABLE CORE 8033525 0
1026 1 D400 1238              STO   L A8M2        SAVE IN ABORT MESSAGE 8033526 0
1028 0 4480 FFE7              BSI   I ABORT       ABORT EXIT            8033527 0
102A 0 E030                   DC      /E030       MID-EXCEEDED CORE     8033528 0
102B 0 0002                   DC      2           WORD COUNT            8033529 0
                        *                                           *  8033530 0
                        *              CONSTANTS                    *  8033531 0
                        *                                           *  8033532 0
102C 0 0000             HOLD  DC      0           SAVE LOCATION         8033533 0
                        *                         ADDRESS               8033534 0
                        *                                           *  8033535 0
                        *********************************************  8033536 0
                        *     MPXDM - EDIT CARD LOADER/ANALYZER     *  8033537 0
```

```
*********************************************** 80335380
*                                             * 80335390
*                ** MPDM2 **                  * 80335400
*                                             * 80335410
*     MPDM2 IS THE EDIT CARD LOADER AND       * 80335420
*     ANALYZER.IT IS CALLED BY THE DMIN       * 80335430
*     ROUTINE TO INPUT MPXDM EDIT CARDS, AND* 80335440
*     BY THE MCTRL ROUTINE TO INPUT THE DFT * 80335450
*     EDIT CARDS.                             * 80335460
*                                             * 80335470
*     MPDM2 FUNCTIONS ARE AS FOLLOWS          * 80335480
*                                             * 80335490
*     1.DETERMINE PROGRAM TO EDIT BY CHECK- * 80335500
*       ING THE EDIT.ADDRESS IN LOCATION      * 80335510
*       EDITA.                                * 80335520
*     2.SET PID CHECK WORD ACCORDING TO       * 80335530
*       PROGRAM BEING EDITED.                 * 80335540
*     3.CALL READ1 TO INPUT EDIT CARDS.       * 80335550
*     4.TEST EACH CARD FOR AN 'E' IN COLUMN * 80335560
*       ONE(EDIT CARD DESIGNATIUN).           * 80335570
*     5.CALL HEX TO CONVERT THE CARD TO       * 80335580
*       BINARY.                               * 80335590
*     6.VERIFY THAT THE EDIT IS FOR THE       * 80335600
*       CORRECT PROGRAM.                      * 80335610
*                                             * 80335620
*     7.VERIFY THAT THE EDIT CARDS ARE IN     * 80335630
*     CORRECT SEQUENCE.                       * 80335640
*     8.VERIFY THAT THE CARD ENTRY COUNTS     * 80335650
*       ARE VALID.                            * 80335660
*     9.STORE THE EDIT DATA AT THE            * 80335670
*       DESIGNATED LOCATIONS.                 * 80335680
*    10.VERIFY THAT AN END OF EDIT CARD DOES* 80335690
*       NOT PRECEED EDIT DATA CARDS.          * 80335700
*                                             * 80335710
*     ALTHOUGH ALL OFF-LINE MONITUR EDIT      * 80335720
*     CARDS ARE LOADED MPDM2 WILL NOT STORE * 80335730
*     THE CONSULE INTERRUPT DDEF FROM CARD 0* 80335740
*     NOR WILL IT STORE ANY DATA FROM CARD 1* 80335750
*     (INTERRUPT LEVEL DEFINITION).THIS       * 80335760
*     INFORMATION IS NOT REQUIRED BY SPXDM. * 80335770
*                                             * 80335780
*                  CALLING SEQUENCE           * 80335790
*                                             * 80335800
*                  BSI L MPDM2                * 80335810
*                                             * 80335820
*     CALLED ROUTINES                         * 80335830
*                                             * 80335840
*         1. READ1 - CARD INPUT ROUTINE       * 80335850
*         2. HEX   - CONVERT TO BINARY        * 80335860
*         3. ABURT - MPXDM ERROR A8ORT RTN    * 80335870
*                                             * 80335880
*     CALLED SUBROUTINES                      * 80335890
*                                             * 80335900
*         NONE                                * 80335910
*                                             * 80335920
* POSSIBLE ABORT CONDITIONS                   * 80335930
*                                             * 80335940
*  CODE  *          CONDITION                 * 80335950
*                                             * 80335960
*  E036  *  MPDM2 HAS BEEN ENTERED FOR        * 80335970
*           EXECUTION 8UT WAS NOT CALLED.     * 80335980
*  E037  *  CARD READ WAS NOT AN EDIT CARD.   * 80335990
*  E038  *  EDIT CARD PID DOES NOT AGREE      * 80336000
*           WITH LOADED PROGRAM PID.          * 80336010
*  E039  *  EDIT CARDS ARE OUT OF SEQUENCE    * 80336020
*  E040  *  A CARD DATA ENTRY CUUNT GREATER   * 80336030
*           THAN 12 WAS SPECIFIED.            * 80336040
*  E041  *  MPXDM EDIT CARD 0 HAS AN ENTRY    * 80336050
*           COUNT OTHER THAN 2.               * 80336060
*  E042  *  AN EDN OF EDIT CARD WAS READ      * 80336070
*           PRIOR TO ANY EDIT DATA CARDS.     * 80336080
*  E043  *  LESS THAN 3 MPXDM EDIT CARDS      * 80336090
*           WERE READ. 3 CARDS IS A MINIMUM.* 80336100
*                                             * 80336110
* ROUTINE ENTRY    MPDM2                      * 80336120
* ROUTINE EXIT     DM200                      * 80336130
*                                             * 80336140
*********************************************** 80336150
*                                             * 80336160
MPDM2 DC       *-*          RETURN ADDRESS     80336170
*                                               80336180
      LDX   L1 SEQCK        SET CONSTANT INDEX  80336190
      LDX   L2 EXTAD        SET ABORT MSG INDEX 80336200
      LDX   L3 EDITA        IX3 # HCCA IX 8ASE  80336210
      LD    X1 CK2-SEQCK    FETCH MPDM2 CK WORD 80336220
      STD    2 A8M3-EXTAD   SAVE IN ABORT MSG   80336230
      EOR    3 LCLID-EDITA  TEST IF = CALLED ID 80336240
      8SC   L  DM20A,&-     8RANCH IF CORRECT   80336250
      LD     2 EXTAD-EXTAD  FETCH ERROR ABORT EXIT 80336260
      STO    3 ABRTX-EDITA  STORE IN HCCA       80336270
*                                               80336280
      8SI   I  A8ORT        ABORT EXIT          80336290
      DC       /E036        MID-MPDM2 XEQ-NUT CALLED 80336300
      DC       2            WORD COUNT          80336310
*                                               80336320
DM20A LD    X1 KE000-SEQCK  SET STARTING SEQ NUM 80336330
      STO   X1 SEQCK-SEQCK  *IN SEQUENCE COUNTER 80336340
      SLA      16           CLEAR LOADER        80336350
      STO    3 LCLID-EDITA *CHECK WORD          80336360
      LD     3 EDITA-EDITA  FETCH EDIT AREA ADDRS 80336370
      STO   X1 EAREA-SEQCK  SAVE ADDRESS IN POINTER 80336380
      LD     3 DM8GN-EDITA  FETCH DM PID ADDRS  80336390
      CMP    3 EDITA-EDITA  TEST FOR DFT EDIT   80336400
      MDX      *+5          DFT EDIT BRANCH     80336410
      LD    L  DMPID        STORE MPXDM PID     80336420
      STO    2 ABM4-EXTAD   *IN MESSAGE STRING  80336430
      LD    X1 K0100-SEQCK DM EDIT-FETCH EDIT ID 80336440
      MDX      *+3          BRANCH TO STORE     80336450
      LD    I  DFTID        FETCH DFT ID        80336460
      STO    2 ABM4-EXTAD STORE IN MESSAGE STRING 80336470
      STO   X1 PIDCK-SEQCK  STORE IN PID CK WORD 80336480
DM20B BSI   L  READ1        BRANCH TO READ CARD  80336490
*                                               80336500
*     TEST CARD FOR 'E' IN COLUMN 1             * 80336510
*                                               80336520
      LDX   L1 EXTAD        SET ABORT MSG INDEX 80336530
      LD    L  INOUT        FETCH COLUMN 1 DATA 80336540
      EOR      K8100        DOES IT CONTAIN 'E' 80336550
      8SC   L  DM20D,+-     BRANCH IF IT DUES   80336560
      LD     1 ABM4-EXTAD   SET PROG PID IN 1ST 80336570
      STO    1 ABM2-EXTAD   * MESSAGE ENTRY     80336580
*                                               80336590
      BSI   I  ABORT        ABORT EXIT          80336600
      DC       /E037        MID-NOT AN EDIT CARD 80336610
      DC       1            WORD COUNT          80336620
*                                               80336630
DM20D LD       K0002        SET CARD TYPE 'EDIT' 80336640
      STO    1 ABM2-EXTAD   SAVE IN A8ORT MESSAGE 80336650
      BSI   L  HEX          CALL HEX SUBROUTINE 80336660
*                                               80336670
*     TEST EDIT CARD FOR PROPER PID,SEQUENCE* 80336680
*     NUMBER AND WURD COUNT.                    * 80336690
*                                               80336700
      LDX   L1 EXTAD        SET ABURT MSG INDEX 80336710
      LDX   L3 INOUT        SET FETCH INDEX     80336720
      LD     3 0            FETCH EDIT CARD PID 80336730
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102D 0 0000

102E 1 6500 10CD
1030 1 6600 1233
1032 0 6700 FFD2
1034 0 C104
1035 0 D206
1036 0 F307
1037 1 4C18 103F
1039 0 C200
103A 0 D306

1038 0 4480 FFE7
103D 0 E036
103E 0 0002

103F 0 C107
1040 0 D100
1041 0 1010
1042 0 D307
1043 0 C300
1044 0 D102
1045 0 C321
1046 0 B300
1047 0 7005
1048 1 C400 0911
104A 0 D207
104B 0 C106
104C 0 7003
104D 0 C480 FFF2
104F 0 D207
1050 0 D101
1051 1 4400 11C7

1053 1 6500 1233
1055 0 C400 FF70
1057 0 F0BE
1058 1 4C18 1060
105A 0 C107
1058 0 D105

105C 0 4480 FFE7
105E 0 E037
105F 0 0001

1060 0 C06F
1061 0 D105
1062 1 4400 114A

1064 1 6500 1233
1066 0 6700 FF70
1068 0 C300
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1069 0 D106              STD   1 ABM3-EXTAD SAVE IN ABURT MESSAGE      80336740
106A 0 F063              EDR     PIDCK      IS IT CDRRECT PID         80336750
106B 1 4C18 1073         BSC  L  DM20E,+-   BRANCH IF IT IS           80336760
106D 0 C060              LD      PIDCK      FETCH EXPECTED PID        80336770
106E 0 D105              STD   1 ABM2-EXTAD SAVE IN ABDRT MESSAGE     80336780
                    *                                                80336790
106F 0 4480 FFE7         BSI  I  ABDRT      ABDRT EXIT                80336800
1071 0 E038              DC      /E038      MIO-WRONG EDIT PID        80336810
1072 0 0002              DC      2          WDRD CDUNT                80336820
                    *                                                80336830
1073 0 C301         DM20E LD     3 1        FETCH SEQUENCE NMBR       80336840
1074 0 D106              STO   1 ABM3-EXTAD SAVE IN ABDRT MESSAGE     80336850
1075 0 F060              EDR     KFFFF      IS IT TERMINATUR          80336860
1076 1 4C18 10B0         BSC  L  OM20P,+-   BRANCH IF TERMINATOR       80336870
1078 0 C301              LD    3 1          FETCH SEQUENCE NMBR       80336880
1079 0 F053              EDR     SEQCK      IS IT CDRRECT             80336890
107A 1 4C18 1082         BSC  L  DM20F,+-   BRANCH IF YES             80336900
107C 0 C050              LD      SEQCK      FETCH EXPECTED SEQ NMBR   80336910
107D 0 D105              STD   1 ABM2-EXTAD SAVE IN ABDRT MESSAGE     80336920
                    *                                                80336930
107E 0 4480 FFE7         BSI  I  ABDRT      ABORT EXIT                80336940
1080 0 E039              DC      /E039      MIO-CARD SEQUENCE ERRDR   80336950
1081 0 0003              DC      3          WDRD CDUNT                80336960
                    *                                                80336970
1082 0 C302         DM20F LD     3 2        FETCH CARD ENTRY COUNT    80336980
1083 0 D106              STO   1 ABM3-EXTAD SAVE IN ABDRT MESSAGE     80336990
1084 0 904D              S       K000C      MORE THAN 12 ENTRIES      80337000
1085 1 4C08 108B         BSC  L  DM20G,&    BRANCH IF NDT             80337010
                    *                                                80337020
1087 0 4480 FFE7         BSI  I  ABDRT      ABDRT EXIT                80337030
1089 0 E040              DC      /E040      MID-ENTRY COUNT TOO BIG   80337040
108A 0 0003              DC      3          WDRD CDUNT                80337050
                    *                                          *     80337060
                    *     STORE REQUIRED EDIT IN PRDPER PROGRAM *    80337070
                    *                                          *     80337080
108B 0 C300         DM20G LD     3 0        FETCH CARD PID            80337090
108C 0 F046              EOR     K0100      IS IT FOR MPXDM           80337100
108D 1 4C20 10A1         BSC  L  DM20K,Z    BRANCH IF NDT             80337110
108F 0 C301              LD    3 1          FETCH SEQUENCE NMBR       80337120
1090 0 F043              EOR     KED00      IS IT CARD 0              80337130
1091 1 4C20 109E         8SC  L  OM20J,Z    8RANCH IF NOT             80337140
1093 0 C302              LD    3 2          FETCH CARD ENTRY CUUNT    80337150
1094 0 F03B              EOR     K0002      IS CUUNT = 2              80337160
1095 1 4C18 109B         BSC  L  DM20H,+-   BRANCH IF IT IS           80337170
                    *                                                80337180
1097 0 4480 FFE7         BSI  I  A8DRT      ABDRT EXIT                80337190
1099 0 E041              DC      /E041      MID-DM CARD 0 ENTRY ERR   80337200
109A 0 0003              OC      3          WDRD CDUNT                80337210
                    *                                                80337220
109B 0 7301         DM20H MDX    3 1        ADJUST FETCH INDEX TO     80337230
109C 0 6201              LDX     2 1        SET ENTRY COUNT INDEX     80337240
109D 0 7005              MDX     DM20L      BRANCH TO STURE WURD      80337250
                    *                                          *     80337260
                    *     MONITOR EDIT CARDS DNE THRDUGH N     *     80337270
                    *                                          *     80337280
109E 0 1801         DM20J SRA      1        IS THIS DM EDIT CARD 1    80337290
109F 0 4818              BSC       +-       SKIP IF IT IS NOT         80337300
10A0 0 700C              MDX       DM20N    BRANCH-8YPASS CARD 1      80337310
10A1 0 6680 FF72    DM20K LDX      I2 INDOT+2 SET ENTRY COUNT INDEX    80337320
10A3 0 7303         DM20L MDX      3 3      ADJUST FETCH IX TU        80337330
                    *                       *1ST EDIT ENTRY           80337340
10A4 1 6580 10CF         LDX       I1 EAREA SET STORE POINTER IX      80337350
10A6 0 C300         DM20M LD       3 0      FETCH EDIT WDRD           80337360
10A7 0 D100              STO       1 0      STURE IN PROP LOC.        80337370
10A8 0 7301              MOX       3 1      INCREMENT FETCH IX        80337380
10A9 0 7101              MOX       1 1      INCREMENT STURE IX        80337390
10AA 0 72FF              MDX       2 -1     SKIP WHEN ALL MUVED       80337400
10AB 0 70FA              MOX       DM20M    8RANCH-CDNTINUE MUVE      80337410
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10AC 0 6922              STX   1 EAREA      SAVE STORAGE POINTER       80337420
10AD 1 7401 10CD    OM20N MDX  L  SEQCK,1   INCR SEQUENCE CUUNTER      80337430
10AF 0 70A1              MDX     DM20B      BRANCH TO READ NEXT CARD   80337440
                    *                                          *     80337450
                    *     THIS SECTIDN SERVICES THE EDIT END CARD      80337460
                    *                                          *     80337470
10B0 0 C01C         DM20P LD       SEQCK    FETCH SEQUENCE COUNTER     80337480
1081 0 F022              EUR       KED00    IS IT AT CARD 00           80337490
1082 1 4C20 108B         BSC  L    DM20R,Z  BRANCH IF IT IS NOT        80337500
10B4 0 C019              LD        PIDCK    FETCH PID                  80337510
1085 1 0400 1238         STD  L    ABM2     SAVE FOR POSS ERRUR        80337520
                    *                                                80337530
10B7 0 4480 FFE7         8SI  I    A8DRT    A8ORT EXIT                 80337540
1089 0 E042              OC        /E042    MID-END CARD-NU DATA CARDS 80337550
10BA 0 0001              DC        1        WORD COUNT                 80337560
                    *                                                80337570
10BB 0 C012         OM20R LD       PIDCK    FETCH PID                  80337580
10BC 0 F016              EOR       K0100    IS IT MPXDM PID            80337590
10BD 1 4C20 10C8         BSC  L    DM20S,Z  BRANCH IF NOT              80337600
10BF 1 6580 10CF         LDX  I1   EAREA    IX # END DF EDIT TABLE     80337610
10C1 0 C014              LD        KFFFF    FETCH TERM WDRD            80337620
10C2 0 D100              STO   1 0          TERMINATE TABLE            80337630
10C3 0 C009              LD        SEQCK    FETCH SEQ COUNTER          80337640
10C4 0 9010              S         KED02    GREATER THAN CARD 2        80337650
10C5 0 4830              BSC       Z-       SKIP IF NOT                80337660
10C6 0 7004              MOX       DM20S    GO TO EXIT                 80337670
                    *                                                80337680
10C7 0 4480 FFE7         8SI  I    ABORT    ABDRT EXIT                 80337690
10C9 0 E043              DC        /E043    MID-MISSING OM EDIT        80337700
10CA 0 0000              OC        0        WDRD COUNT                 80337710
                    *                                                80337720
10CB 1 4C80 102D    OM20S BSC  I   MPDM2    EXIT TO CALLER             80337730
                    *                                          *     80337740
                    *                CONSTANTS                 *     80337750
                    *                                          *     80337760
                    *                                                80337770
10CD 0 0000         SEQCK DC       0        CARD SEQUENCE COUNTER      80337780
10CE 0 0000         PIDCK DC       0        CARD PID CHECK WDRD        80337790
10CF 0 0000         EAREA OC       *-*      EDIT OATA STURAGE PTR      80337800
1000 0 0002         K0002 DC       2        CDNSTANT 2                 80337810
10D1 0 2002         CK2   DC       /2002    MPDM2 CHECK WURD           80337820
10D2 0 000C         K000C DC       /000C    *                          80337830
10D3 0 0100         K0100 OC       /0100    *                          80337840
1004 0 E000         KED00 DC       /E000    *    CDNSTANTS             80337850
10D5 0 ED02         KED02 DC       /E002    *                          80337860
10D6 0 FFFF         KFFFF OC       /FFFF    *                          80337870
                    *                                          *     80337880
                    ********************************************     80337890
                    *    MPXOM - CDNTRUL CARD LDADER/ANALYZER  *     80337900
                    ********************************************     80337910
                    *                                          *     80337920
                    *              ** MPDM4 **                 *     80337930
                    *                                          *     80337940
                    *     MPOM4 IS ENTERED WHEN THE OPERATDR   *     80337950
                    *     REQUESTS THE INPUT UF OFT CONTROL    *     80337960
                    *     CARDS(C.F. SWITCH #8).               *     80337970
                    *                                          *     80337980
                    *     THE RUUTINE FUNCTIONS ARE AS FOLLOWS *     80337990
                    *                                          *     80338000
                    *     1.CALL RDUTINE READ1 TO INPUT CUNTRUL *    80338010
                    *       CARDS.                             *     80338020
                    *     2.VERIFY THAT THE CARD READ WAS A    *     80338030
                    *       CDNTRUL CARD 8Y CHECKING COLUMNS 1 *     80338040
                    *       THROUGH 4 FUR $$FN.                *     80338050
                    *     3.CHECK CULUMN 5.IF IT CONTAINS 'F'  *     80338060
                    *       (END CONTROL CARD) EXIT THE RUUTINE.*    80338070
                    *     4.IF COLUMN 5 DID NUT CUNTAIN AN 'F', *    80338080
                    *       CALL ON RUUTINE HEX TO CONVERT THE *     80338090
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*       CARD TO BINARY.                          *      80338100
*     5.VERIFY THAT THE FUNCTION NUM8ER IN       *      80338110
*       COLUMN 5 IS NUT GREATER THAN 3.          *      80338120
*     6.VERIFY THAT THE PID PUNCHED IN THE       *      80338130
*       CARD IS THE SAME AS THE PID OF THE       *      80338140
*       DFT IN CORE.                             *      80338150
*     7.STORE THE CARD DATA IN THE DFT           *      80338160
*       SWITCH LOCATION SPECIFIED BY THE         *      80338170
*       FONCTION NUM8ER IN COLOMN 5.             *      80338180
*     8.CALL THE LOG ROUTINE TU OUTPOT           *      80338190
*       MESSAGE A003-CONTROL CARD ACKNOWL-       *      80338200
*       EDGE.                                    *      80338210
*                                                *      80338220
*                  CALLING SEQUENCE              *      80338230
*                                                *      80338240
*                  BSI L MPDM4                   *      80338250
*                                                *      80338260
*     CALLED ROOTINES                            *      80338270
*                                                *      80338280
*         1. READ1 - CARD READ RUUTINE.          *      80338290
*         2. HEX   - CONVERT TO BINARY.          *      80338300
*         3. LOG   - PRINT ROOTINE.              *      80338310
*         4. ABORT - MPXDM ERRDR ABURT RTN.      *      80338320
*                                                *      80338330
*     CALLED SUBROUTINES                         *      80338340
*                                                *      80338350
*         NONE                                   *      80338360
*                                                *      80338370
* POSSIBLE A8ORT CONDITIUNS                      *      80338380
*                                                *      80338390
*  CODE  *            CONDITION                  *      80338400
*                                                *      80338410
*  E044  *  MPDM4 HAS BEEN ENTERED FOR           *      80338420
*           EXECUTION BOT WAS NOT CALLED.        *      80338430
*  E045  *  CARD READ DUES NOT CONTAIN $$FN      *      80338440
*           IN COLOMNS 1 THROOGH 4.              *      80338450
*  E046  *  COLUMN 5(SWITCH FONCTION) DOES       *      80338460
*           NOT CONTAIN 0,1,2,3 DR F.            *      80338470
*                                                *      80338480
* RUUTINE ENTRY    MPDM4                         *      80338490
* ROOTINE EXIT     DM4XT                         *      80338500
*                                                *      80338510
**************************************************      80338520
*                                                *      80338530
10D7 0 0000    MPDM4 DC      *-*       RETURN ADDRESS   80338540
*                                                       80338550
10D8 1 6600 1233       LDX  L2 EXTAD    SET A8DRT MESSAGE INDEX  80338560
10DA 0 6700 FFD2       LDX  L3 EDITA    SET COMMONICATION INDEX  80338570
10DC 0 C064            LD      CK4      FETCH MPDM4 CK WORD      80338580
10DD 0 D206            STO   2 ABM3-EXTAD  SAVE IN ABORT MESSAGE 80338590
10DE 0 F307            EOR   3 LCLID-EDITA TEST = CALLED ID      80338600
10DF 1 4C18 10E7       BSC  L  DM4AA,&-   BRANCH IF CORRECT      80338610
10E1 0 C200            LD    2 EXTAD-EXTAD FETCH ERROR A8ORT EXIT 80338620
10E2 0 D306            STO   3 ABRTX-EDITA STORE IN HIGH CORE AREA 80338630
*                                                      80338640
10E3 0 4480 FFE7       BSI  I  ABORT    ABORT EXIT               80338650
10E5 0 E044            DC      /E044    MID-MPDM4XEQ-NOT CALLED  80338660
10E6 0 0002            DC      2        WORD COONT               80338670
*                                                      80338680
10E7 0 1010    DM4AA SLA      16        CLEAR LOADER             80338690
10E8 0 D307           STO   3 LCLID-EDITA  *CHECK WORD           80338700
10E9 0 C059           LD      CTRXT     FETCH CONTROL CARD A8ORT 80338710
10EA 0 D306           STO   3 A8RTX-EDITA *EXIT - SET IN HCCA    80338720
10EB 0 D056           STO     CTLRD     SET CONTROL CARD IND     80338730
10EC 1 4400 11C7 DM40A BSI  L  READ1     BRANCH TO READ CARD      80338740
*                                                       80338750
*     VERIFY THAT COLOMNS 1 THROOGH 4                   80338760
*     CONTAIN $$FN .                                    80338770
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*                                                      80338780
*       LDX   1 -4          SET COLOMN INDEX           80338790
10EE 0 61FC                                            80338800
10EF 0 C500 FF74 DM40C LD   L1 INOUT+4  FETCH CARD COLOMN 80338810
10F1 1 F500 1140       EOR  L1 CKWRD+4  PROPER COLOMN DATA 80338820
10F3 1 4C18 10F9       BSC  L  DM40E,+- 8RANCH IF IT IS   80338830
*                                                      80338840
10F5 0 4480 FFE7 DM40D BSI  I  ABORT    ABORT EXIT       80338850
10F7 0 E045            DC      /ED45    MID-CARD NOT $$FN 80338860
10F8 0 0000            DC      0        WORD COONT       80338870
*                                                      80338880
10F9 1 C400 0D9A DM40E LD   L  K2000    SET ZERO DATA    80338890
10FB 0 D500 FF74       STO  L1 INOUT+4   *IN CHECKED COLUMNS 80338900
10FD 0 7101            MDX  1 1         UPDATE COLUMN XR-SKIP 0 80338910
10FE 0 70F0            MDX     DM40C    BRANCH TO CHECK NEXT 80338920
*                              *CDLOMN                 80338930
*                                                      80338940
*     VERIFY AND COVERT COLOMNS 5 THRU 11              80338950
*                                                      80338960
10FF 0 C400 FF74       LD   L  INUOT+4  FETCH COLUMN 5   80338970
1101 0 F03C            EOR     CKWRD+2  IS IF 'F'        80338980
*                                                      80338990
1102 1 4C18 1135 DM40F BSC  L  DM40K,&-  EXIT LOADER IF IT IS 80339000
1104 0 C038            LD      K3       SET CARD TYPE 'CONTRUL' 80339010
1105 0 D205            STD   2 ABM2-EXTAD  SAVE IN ABORT MESSAGE 80339020
1106 1 4400 114A       BSI  L  HEX      CALL ON HEX SUBRTN 80339030
1108 1 6600 1233       LDX  L2 EXTAD    SET A8DRT MESSAGE INDEX 80339040
110A 0 6500 FF70       LDX  L1 INOUT    SET FETCH INDEX    80339050
110C 0 C100            LD    1 0        FETCH SWITCH NUMBER 80339060
110D 0 D205            STO   2 A8M2-EXTAD SAVE IN A8ORT MESSAGE 80339070
110E 0 9031            S       K3       IS IT GREATER THAN 3 80339080
110F 1 4C08 1115       BSC  L  DM40J,+  8RANCH IF IT IS NOT 80339090
*                                                      80339100
1111 0 4480 FFE7       BSI  I  A8DRT    A8ORT EXIT       80339110
1113 0 E046            DC      /E046    MID-ILLEGAL SWITCH NUMBER 80339120
1114 0 0001            DC      1        WORD COONT       80339130
*                                                      80339140
*     STORE CUNTRUL CARD DATA IN PROPER DFT            80339150
*     SWITCH LOCATIUN                                  80339160
*                                                      80339170
1115 0 6780 FFF2 DM40J LDX  I3 DFTID     IX # DFT PID ADDRESS 80339180
1117 0 C101            LD    1 1        FETCH CARD PID   80339190
1118 0 D206            STO   2 A8M3-EXTAD SAVE FUR PUSSIBLE ERRUR 80339200
1119 0 F300            EDR   3 0        CK AGAINST DFT PID 80339210
111A 1 4C18 1122       BSC  L  DM40M,+- 8RANCH IF SAME   80339220
111C 0 C300            LD    3 0        FETCH DFT PID    80339230
111D 0 D205            STO   2 A8M2-EXTAD SAVE IN ABDRT MESSAGE 80339240
*                                                      80339250
111E 0 4480 FFE7       8SI  I  ABORT    CALL ERRDR A8ORT RTN 80339260
1120 0 E049            DC      /E049    ERR CODE-INCORRECT PID 80339270
1121 0 0002            DC      2        WORD COONT       80339280
*                                                      80339290
1122 0 7303    DM4DM MDX   3 3          IX3 = DFT SWO LOCATION 80339300
1123 0 7780 FF70       MDX  I3 INOUT    IX3 = SW LOC TO STORE 80339310
1125 0 C102            LD    1 2        FETCH SWITCH DATA 80339320
1126 0 D300            STO   3 0        STORE DATA IN SW LOC 80339330
1127 0 D021            STO     MSG3B    SET IN MESSAGE STRING 80339340
1128 0 C480 FFF2       LD   I  DFTID    FETCH PID        80339350
112A 0 18D0            RTE     16       POSITION         80339360
112B 0 C100            LD    1 0        FETCH SWITCH NOM8ER 80339370
112C 0 1004            SLA     4        POSITION         80339380
112D 0 1088            SLT     8        DEVELOP XOZZ - FCN/PID 80339390
112E 0 D019            STO     MSG3A    SET IN MESSAGE STRING 80339400
112F 0 4480 FFF8 DM40L BSI  I  LUG      CALL LUG ROOTINE 80339410
1131 1 1145            DC      MSGA3    MESSAGE ADDRESS  80339420
1132 1 112F            DC      DM40L    TERMINATION TYPE 80339430
1133 0 0000            DC      0000     TERMINATION TYPE 80339440
1134 0 7087            MDX     DM40A    GO INPOT NEXT CARD 80339450
*
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1135 0 C00E        DM40K LD      CTRXT+1   RESTORE A8ORT EXIT TO      80339460
1136 0 D400 FFD8         STO  L  ABRTX     *MAIN LINE CONTROL         80339470
1138 0 1010              SLA     16        CLEAR CONTROL              80339480
1139 0 D008              STO     CTLRD      *CARD INDICATOR           80339490
113A 1 4C80 10D7   DM4XT BSC  I  MPDM4     EXIT LOADER                80339500
                   *                                                  80339510
                   *              CONSTANTS                           80339520
                   *                                                  80339530
113C 0 4420        CKWRD DC      /4420     CARD CODE FOR '$'          80339540
113D 0 4420              DC      /4420     CARD CODE FOR '$'          80339550
113E 0 8080              DC      /8080     CARD CODE FOR 'F'          80339560
113F 0 4100              OC      /4100     CARD CODE FOR 'N'          80339570
1140 0 0003        K3    DC      3         CONSTANT 3                 80339580
1141 0 4004        CK4   DC      /4004     MPOM4 CHECK WORD           80339590
1142 0 0000        CTLRD DC      0         CONTROL CARD INDICATOR     80339600
1143 1 1135        CTRXT DC      DM40K     CONTROL CARD A8ORT EXIT    80339610
1144 1 0987              OC      CTL1      MAIN LINE CONTROL EXIT     80339620
                   *                                                  80339630
                   *          A003 MESSAGE STRING                     80339640
                   *                                                  80339650
1145 0 0002        MSGA3 DC      /0002     LINE NUM8ER/WORD COUNT     80339660
1146 0 0000              DC      /0000     HEX/DEC = HEX OUTPUT       80339670
1147 0 A003              DC      /A003     MESSAGE ID                 80339680
1148 0 0000        MSG3A DC      0         XOZZ FUNCTION AND PIO      80339690
1149 0 0000        MSG3B DC      0         YYYY DATA IMAGE            80339700
                   *                                                  80339710
                   ************************************************   80339720
                   *    MPXDM - CARD CODE TO 8INARY CONVERT       *   80339730
                   ************************************************   80339740
                   *                                                  80339750
                   *              ** HEX **                           80339760
                   *                                                  80339770
                   *     ROUTINE HEX IS USEO TO CONVERT CARD          80339780
                   *     CODEO HEXIDECIMAL TO 8INARY(MACHINE          80339790
                   *     HEXIDECIMAL).IT IS CALLED 8Y THE TYPE        80339800
                   *     SU8ROUTINE TO CONVERT HEX PATCH CARDS,       80339810
                   *     8Y LOADER MPOM2 TO CONVERT EDIT CARDS        80339820
                   *     AND 8Y LDADER MPOM4 TO CONVERT OFT           80339830
                   *     CONTROL CARDS.                               80339840
                   *                                                  80339850
                   *     ROUTINE FUNCTIONS ARE AS FOLLOWS             80339860
                   *                                                  80339870
                   *     1.FETCH OATA TO CONVERT FROM LOCATIONS       80339880
                   *       INOUT(FF70) THROUGH INOUT+79(FF8F).        80339890
                   *     2.CONVERT EACH DATA GROUP OF 4 CARD          80339900
                   *       COLUMNS TO ONE 16 BIT WORD.                80339910
                   *     3.VERIFY THAT THE DATA GROUPS CUNTAIN        80339920
                   *       ONLY HEX DATA(0 THRU 9 AND A THRU F)       80339930
                   *     4.CHECK RELOCATIDN COLUMNS (CDLUMNS 6,       80339940
                   *       11,16,21 ETC.).                            80339950
                   *       A.IF CONVERTING HEX PATCH CARDS,THE        80339960
                   *         RELOCATION COLUMN MAY 8E 8LANK OR        80339970
                   *         PUNCHED WITH AN 'R'.THE 'R' INDI-        80339980
                   *         CATES THAT THE FOLLOWING DATA            80339990
                   *         GROUP IS RELOCATA8LE.                    80340000
                   *       8.IF CONVERTING EDIT OR CONTROL            80340010
                   *         CAROS,THE RELOCATIUN CDLUMN MUST         80340020
                   *         8E 8LANK.                                80340030
                   *     5.STORE THE CONVERTED DATA                   80340040
                   *       A.IF PATCH CARDS,HEX WILL STORE THE        80340050
                   *         DATA STARTING AT THE ADDRESS             80340060
                   *         SPECIFIED IN COLUMNS 1 THRU 5.THE        80340070
                   *         ADDRESS AND DATA WILL 8E RE-LOCAT-       80340080
                   *         ED AS REQUIRED.                          80340090
                   *       B.EOIT AND CONTROL CARO DATA WILL          80340100
                   *         8E STOREO STARTING AT LOCATION           80340110
                   *         INOUT.THE CALLING LOADER WILL            80340120
                   *         STORE THE DATA AT ITS ULTIMATE           80340130
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                   *        LUCATION.                                 80340140
                   *     6.ROUTINE EXIT WILL OCCUR WHEN EITHER        80340150
                   *       A 8LANK DATA COLUMN IS DETECTED OR         80340160
                   *       WHEN THE ENTIRE CARD IS CONVERTED.         80340170
                   *                                                  80340180
                   *                  CALLING SEQUENCE                80340190
                   *                                                  80340200
                   *                  BSI   HEX                       80340210
                   *                                                  80340220
                   *     CALLED RUUTINES                              80340230
                   *                                                  80340240
                   *        1. A8ORT - MPXOM ERROR A8ORT RTN.         80340250
                   *                                                  80340260
                   *     CALLED SUBROUTINES                           80340270
                   *                                                  80340280
                   *        1. CKADR - CHECK STORE AODRESS            80340290
                   *                                                  80340300
                   * POSSIBLE A8ORT CONDITIONS                        80340310
                   *                                                  80340320
                   *  CODE  *            CONDITIUN                    80340330
                   *                                                  80340340
                   *  E031  *  A HEX PATCH CARO RELOCATIUN            80340350
                   *           COLUMN CONTAINED OTHER THAN 'R'.       80340360
                   *  E032  *  11 ZONE PUNCH IN OATA COLUMN-NUT       80340370
                   *           A HEX CHARACTER.                       80340380
                   *  E033  *  8OTH A 12 AND 0 ZUNE PUNCH IN A       80340390
                   *           DATA COLUMN-NOT A HEX CHARACTER.       80340400
                   *  E034  *  A 8LANK OR A 12 ZONE ONLY PUNCH       80340410
                   *           IN A DATA COLUMN-NUT A HEX             80340420
                   *           CHARACTER.                             80340430
                   *  E035  *  MULTIPLE DIGIT PUNCHES IN A DATA       80340440
                   *           COLUMN-NOT A HEX CHARACTER.            80340450
                   *  E047  *  EDIT OR CONTROL CARD RELOCATION        80340460
                   *           COLUMN WAS NOT 8LANK.                  80340470
                   *                                                  80340480
                   * ROUTINE ENTRY    HEX                            80340490
                   * ROUTINE EXIT     HEXXT OR HEX05+2               80340500
                   *                                                  80340510
                   ************************************************   80340520
                   *                                                  80340530
114A 0 0000        HEX   DC      *-*       CONTAINS RETURN            80340540
                   *                       ADDRESS UN ENTRY           80340550
1148 0 1010              SLA     16        ENTRY POINT -CLEAR A       80340560
114C 0 D077              STO     ADRS      CLEAR ADDRESS PUINTER      80340570
114D 0 61AF              LDX   1 -81       SET COLUMN COUNTER         80340580
114E 0 1010        HEX01 SLA     16                                   80340590
114F 0 D073              STO     RLIND     CLEAR RELOCATE INDICATOR   80340600
1150 1 7400 11C4         MDX  L  ADRS,0    SKIP UN ZERO ADDRESS       80340610
1152 0 7001              MDX     HEX02     BRANCH TO CK RELUCATIUN    80340620
1153 0 7013              MDX     HEX04     BYPASS RELUCATION CHECK    80340630
1154 0 C500 FFC1   HEX02 LD   L1 INOUT+81   FETCH RELOCATION COLUMN    80340640
1156 1 4C18 1167         BSC  L  HEX04,+-   BRANCH ON ZERO DATA       80340650
1158 1 7400 1018         MDX  L  PATCH,0    SKIP IF EOIT CARD          80340660
115A 0 7004              MDX     HEX2A     PATCH CARD 8RANCH          80340670
                   *                                                  80340680
1158 0 4480 FFE7         8SI  I  ABORT     CALL ABORT ROUTINE         80340690
115D 0 E047              DC      /E047     MID-NO 8LNK 8ETWEEN FLDS   80340700
115E 0 0001              DC      1         WURD COUNT                 80340710
                   *                                                  80340720
115F 0 F066        HEX2A EOR     K4010     CHECK FOR 'R'              80340730
1160 0 4818              8SC     +-        SKIP IF NOT 'R'            80340740
1161 0 7004              MDX     HEX03     8RANCH OVER A8ORT CALL     80340750
                   *                                                  80340760
1162 0 4480 FFE7         8SI  I  ABORT     ABORT EXIT                 80340770
1164 0 E031              DC      /E031     MIO-RELOC COL NOT 'R'      80340780
1165 0 0001              DC      1         WORD CUUNT                 80340790
                   *                                                  80340800
1166 0 685C        HEX03 STX     RLIND     SET RELOCATE INDICATOR     80340810
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1167 0 7101          HEX04 MDX   1 1       SKIP ON COLOMN COUNTER 0     80340820
1168 0 7002                MOX     HEX05    BRANCH TO CONTINUE           80340830
                     *                                                  80340840
1169 1 4C80 114A     HEXXT BSC   I HEX      EXIT 80 COLOMNS CONVERTED    80340850
                     *                                                  80340860
116B 0 C500 FFC1     HEX05 LD    L1 INOUT+81  FETCH 1ST WORD OF GROUP     80340870
116D 1 4C98 114A           BSC   I HEX,+-   EXIT HEX IF BLANK           80340880
116F 0 6204                LDX    2 4       SET GROUP OF 4 INDEX         80340890
1170 0 1004          HEX06 SLA     4        POSITION A REG               80340900
1171 0 D050                STO     WORK1    SAVE A REG                   80340910
1172 0 1010                SLA     16       CLEAR A REG                  80340920
1173 0 D051                STO     ZONE     CLEAR 12 ZONE INOICATOR      80340930
1174 0 6300                LDX    3 0       SET CHARACTER IX             80340940
1175 0 C500 FFC1           LO    L1 INOUT+81  FETCH CARD COLUMN          80340950
1177 1 4C10 117B           BSC   L HEX07,-  BRANCH ON ZERO 12 ZONE       80340960
1179 0 7309                MDX    3 9       SET XR FOR ALPHA DATA        80340970
117A 0 684A                STX     ZONE     SET 12 ZONE INDICATOR        80340980
117B 0 1001          HEX07 SLA     1        POSITION 11 ZONE BIT         80340990
117C 1 4C10 1182           BSC   L HEX08,-  BRANCH ON ZERO 11 ZONE       80341000
                     *                                                  80341010
117E 0 4480 FFE7           BSI   I ABORT    ABORT EXIT                   80341020
1180 0 E032                DC      /E032    MID-11 ZONE PUNCH-NOT HEX    80341030
1181 0 0001                DC      1        WORD COUNT                   80341040
                     *                                                  80341050
1182 0 1001          HEX08 SLA     1        POSITION 0 ZONE              80341060
1183 1 4C10 1180           BSC   L HEX09,-  BRANCH ON ZERO 0 ZONE        80341070
1185 1 7400 11C5           MDX   L ZONE,0   SKIP IF 12 ZONE 0            80341080
1187 0 7001                MDX     *+1      12 ZONE ON-CALL ABORT        80341090
1188 0 700E                MOX     HEX11    CONTINUE BRANCH              80341100
                     *                                                  80341110
1189 0 4480 FFE7           BSI   I ABORT    ABORT EXIT                   80341120
118B 0 E033                OC      /E033    MID-11-0 PUNCHES-NOT HEX     80341130
118C 0 0001                OC      1        WORD COUNT                   80341140
                     *                                                  80341150
118D 1 4C20 1193     HEX09 BSC   L HEX10,Z  BRANCH IF DIGITS ON          80341160
                     *                                                  80341170
118F 0 4480 FFE7           BSI   I ABORT    ABORT EXIT                   80341180
1191 0 E034                DC      /E034    MID-NO DIGIT PCH -NOT HEX    80341190
1192 0 0001                DC      1        WORD COUNT                   80341200
                     *                                                  80341210
1193 0 7301          HEX10 MDX     3 1      INCR CHARACTER XR            80341220
1194 0 1001                SLA     1        POSITION DIGIT BIT           80341230
1195 0 4810                BSC     -        SKIP IF DIGIT FOUND          80341240
1196 0 70FC                MOX     HEX10    BRANCH TO CK NEXT DIGIT      80341250
1197 0 1001          HEX11 SLA     1        REMOVE FOUND DIGIT           80341260
1198 1 4C18 119E           BSC   L HEX12,+-  BRANCH IF NO OTHERS         80341270
                     *                                                  80341280
119A 0 4480 FFE7           BSI   I ABORT    ABORT EXIT                   80341290
119C 0 E035                DC      /E035    MID-MULT DIGITS-NOT HEX      80341300
1190 0 0001                DC      1        WORD COUNT                   80341310
                     *                                                  80341320
119E 0 6B22          HEX12 STX     3 WORK   STORE CHARACTER              80341330
119F 0 C021                LD      WORK     FETCH CHARACTER              80341340
11A0 0 E821                OR      WORK1    INCLUDE PREVIOUS CHARS       80341350
11A1 0 7101                MDX     1 1      INCR COLUMN XR               80341360
11A2 0 72FF                MDX     2 -1     SKIP IF GROOP COMPLETE       80341370
11A3 0 70CC                MDX     HEX06    GO CONVERT NEXT COLUMN       80341380
11A4 1 6680 11C4           LDX     I2 ADRS  IX 2 = STORAGE ADDRESS       80341390
11A6 1 7400 1018           MDX   L PATCH,0  SKIP IF EDIT CARD            80341400
11A8 0 7003                MOX     HEX13    PATCH CARD BRANCH            80341410
11A9 0 D600 FF70           STO   L2 INOUT   SAVE CONVERTED EDIT WORD     80341420
11AB 0 7012                MDX     HEX15    CONTINUE BRANCH              80341430
11AC 1 7400 11C4     HEX13 MDX   L ADRS,0   SKIP IF ADDRESS FIELD        80341440
11AE 0 7004                MDX     HEX14    DATA FIELD BRANCH            80341450
11AF 1 8400 0FCE           A     L RELFC    ADD RELOCATION FACTOR        80341460
11B1 0 D012                STO     ADRS     SAVE ADJUSTED ADDRESS        80341470
11B2 0 709B                MDX     HEX01    GO TO CONVERT DATA           80341480
11B3 1 7400 11C3     HEX14 MDX   L RLIND,0  SKIP IF DATA NOT RELOC       80341490
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11B5 0 7001                MDX     *&1      BRNH TO ADD RELOC FACTOR     80341500
11B6 0 7002                MDX     *+2      BRANCH TO STORE WORD         80341510
11B7 1 8400 0FCE           A     L RELFC    ADD RELOCATION FACTOR        80341520
11B9 0 D007                STO     WORK     SAVE DATA WORD               80341530
11BA 1 4400 1019           BSI   L CKADR    CALL ADDRESS CK RTN          80341540
11BC 0 C004                LO      WORK     FETCH CONVERTED DATA         80341550
11BD 0 D200                STO    2 0       STORE IN PROPER LOC          80341560
11BE 1 7401 11C4     HEX15 MDX   L ADRS,1    INCREMENT STORAGE POINTER    80341570
11C0 0 708D                MDX     HEX01    CONTINUE CONVERSION          80341580
                     *                                          *         80341590
                     *                CONSTANTS                 *         80341600
                     *                                          *         80341610
11C1 0 0000          WORK  DC      0          WORK LOCATION 1             80341620
11C2 0 0000          WORK1 DC      0          WORK LOCATION 2             80341630
11C3 0 0000          RLIND DC      0          RELOCATE GROUP IND          80341640
11C4 0 0000          ADRS  DC      *-*        HEX CARD ADDRESS            80341650
11C5 0 0000          ZONE  DC      0          12 ZONE INDICATOR           80341660
11C6 0 4010          K4010 DC      /4010      'R' CARD CODE               80341670
                     *                                          *         80341680
                     ********************************************         80341690
                     *       MPXDM - CARD INPUT ROUTINE         *         80341700
                     ********************************************         80341710
                     *                                          *         80341720
                     *              ** READ1 **                 *         80341730
                     *                                          *         80341740
                     *    THIS RDUTINE IS CALLED WHENEVER A CARD*         80341750
                     *    READ FUNCTION IS TO BE PERFORMED.IT IS*         80341760
                     *    CALLED BY MPDM1 TO READ THE DFT OBJECT*         80341770
                     *    DECK,BY MPDM2 TO READ MPXDM AND DFT   *         80341780
                     *    EDIT CARDS AND BY MPDM4 TO READ DFT   *         80341790
                     *    CONTROL CARDS.                        *         80341800
                     *                                          *         80341810
                     *    READ1 CALLS ON THE MPX CARDZ (1442)   *         80341820
                     *    ROUTINE TO PERFORM THE ACTUAL READING *         80341830
                     *    OF CARDS.THE CARDS WILL BE PLACED,BY  *         80341840
                     *    CARDZ,IN LOCATIONS INOUT(FF70)THROUGH *         80341850
                     *    INOUT+79(FFBF).THE DATA IS STORED IN  *         80341860
                     *    CARD IMAGE.                           *         80341870
                     *                                          *         80341880
                     *    IF THE 1442 IS OFF-LINE WHEN READ1 IS *         80341890
                     *    ENTERED,A CALL IS MADE ON CARDZ TO    *         80341900
                     *    PLACE IT ON-LINE.AFTER A CARD HAS BEEN*         80341910
                     *    READ,READ1 WILL CALL CARDZ TO RESTORE *         80341920
                     *    THE 1442 OFF-LINE.                    *         80341930
                     *                                          *         80341940
                     *    ONE CARD WILL BE READ EACH TIME READ1 *         80341950
                     *    IS CALLED.                            *         80341960
                     *                                          *         80341970
                     *    MPX WILL INFORM THE OPERATOR,VIA A    *         80341980
                     *    TYPED MESSAGE IF THE 1442 GOES NOT    *         80341990
                     *    READY.BOTH MPX AND MPXDM WILL INFORM  *         80342000
                     *    THE OPERATOR OF 1442 ERROR CONDITIONS.*         80342010
                     *                                          *         80342020
                     *              CALLING SEQUENCE            *         80342030
                     *                                          *         80342040
                     *              BSI L READ1                 *         80342050
                     *                                          *         80342060
                     *    CALLED ROUTINES                       *         80342070
                     *                                          *         80342080
                     *        1. CARDZ - MPX CARD READ ROUTINE  *         80342090
                     *        2. ABORT - MPXDM ERROR ABORT RTN  *         80342100
                     *                                          *         80342110
                     *    CALLED SUBROUTINES                    *         80342120
                     *                                          *         80342130
                     *        NONE                              *         80342140
                     *                                          *         80342150
                     * POSSIBLE ABORT CONDITIONS                *         80342160
                     *                                          *         80342170
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                         *  CODE  *            CONDITION                 *      80342180
                         *                                               *      80342190
                         *  EC04  *  1442 PARITY ERROR                   *      80342200
                         *  EC05  *  1442 FEED CHECK                     *      80342210
                         *  EC06  *  1442 READ/PUNCH CHECK               *      80342220
                         *                                               *      80342230
                         * ROUTINE ENTRY    READ1                        *      80342240
                         * ROUTINE EXIT     RD106                        *      80342250
                         *                                               *      80342260
                         ************************************************      80342270
                         *                                               *      80342280
11C7 0 0000              READ1 DC      0          ENTRY POINT             *      80342290
                         *                                                      80342300
11C8 0 6150                    LDX   1 80         IX 1 = WORD COUNT 80           80342310
11C9 0 6D00 FF6F               STX   L1 INOUT-1   SET WORD CNT IN I/O AREA       80342320
                         *                                                      80342330
11CB 1 4400 123C               BSI   L  CARDZ     CALL CARDZ ROUTINE            80342340
11CD 1 120E                    DC       LIST1     I/O LIST ADDRESS              80342350
                         *                                                      80342360
11CE 0 C03F              RD100 LO       LIST1     FETCH LINK/BUSY PARAM         80342370
11CF 1 4C20 11CE               BSC   L  RD100,Z   BRANCH IF BUSY                80342380
11D1 0 C042                    LD       LIST1+6   FETCH ERROR PARAMETER         80342390
11D2 0 D01D                    STO      RD102+2   SAVE IT                       80342400
11D3 1 74FF 1214               MDX   L  LIST1&6,-1  SKIP IF OP COMPLETE        80342410
11D5 0 7001                    MDX      *&1       BRANCH-NOT OP COMP            80342420
11D6 0 7020                    MDX      RD104     BRANCH-OP COMPLETE            80342430
11D7 0 C03C                    LD       LIST1&6   FETCH ERROR PARAMETER         80342440
11D8 1 8400 0995               CMP   L  K2        CK FOR 1442 NOT READY         80342450
11DA 0 7002                    MDX      *&2       GT 2 - ERROR OR LAST CARD     80342460
11DB 0 7016                    MDX      RD103     LT 2 - DEVICE OFF LINE        80342470
11DC 0 70E8                    MDX      READ1&1   = 2 - 1442 NRDY-REPEAT        80342480
11DD 0 F02F                    EOR      K7        TEST IF LAST CARD             80342490
11DE 1 4C18 11F7               BSC   L  RD104,&-  BRANCH ON LAST CARD IND       80342500
11E0 0 C00F                    LD       RD102+2   FETCH ERROR CODE              80342510
11E1 0 E82A                    OR       KEC00     ADD MID PREFEX                80342520
11E2 0 D00D                    STO      RD102+2   SAVE CODE                     80342530
11E3 0 6824                    STX      A8TID     SET ABORT INDICATOR           80342540
11E4 1 7400 120A               MDX   L  DVOL,0     SKIP IF OFF LINE IND =0       80342550
11E6 0 701A                    MDX      RD105     BRANCH - IND IS ON            80342560
11E7 0 C023              RD101 LD       ROFCN     SET I/O LIST FUNCTION         80342570
11E8 0 D02C                    STO      LIST1+7   * TO READ CARD                 80342580
11E9 0 C01E                    LD       A8TID     FETCH ABORT INDICATOR         80342590
11EA 0 4818                    BSC      +-        SKIP IF ON                    80342600
11E8 0 701A                    MDX      RD106     CARD READ-CONTINUE            80342610
11EC 0 1010                    SLA      16        CLEAR ABORT                   80342620
11ED 0 D01A                    STO      A8TID     * INDICATOR                   80342630
                         *                                                      80342640
11EE 0 4480 FFE7         RD102 BSI   I  A8ORT     A8ORT EXIT                    80342650
11F0 0 EC00                    DC       /EC00     MID-CARD READ-CARDN-ERROR     80342660
11F1 0 0000                    DC       0         WORD COUNT                    80342670
                         *                                                      80342680
11F2 0 6817              RD103 STX      DVOL      SET DEV OFF LINE IND          80342690
11F3 1 C400 10D3               LD    L  K0100     SET I/O LIST PARAMETER        80342700
11F5 0 D01F                    STO      LIST1+7   * TO PLACE DEV ON LINE        80342710
11F6 0 70D1                    MDX      READ1&1   BRANCH-PUT DEV ON LINE        80342720
11F7 0 C012              RD104 LD       DVOL      FETCH DEV OFF LINE IND        80342730
11F8 1 4C18 11E7               BSC   L  RD101,+-  BRANCH IF IND = 0             80342740
11FA 1 7400 1209               MDX   L  RDIND,0    SKIP IF READ IND OFF          80342750
11FC 0 7004                    MDX      RD105     BRANCH-INDICATOR ON           80342760
11FD 0 680B                    STX      RDIND     SET READ INDICATOR            80342770
11FE 0 C00C                    LD       RDFCN     SET I/O LIST PARAMETER        80342780
11FF 0 D015                    STO      LIST1+7   * TO READ CARD                80342790
1200 0 70C7                    MDX      READ1&1   BRANCH TO READ A CARD         80342800
1201 0 1010              RD105 SLA      16        CLEAR READ                    80342810
1202 0 D006                    STO      RDIND     * AND DEVICE OFF              80342820
1203 0 D006                    STO      DVOL      *   LINE INDICATORS           80342830
1204 0 D010                    STO      LIST1+7   I/O PARAM FOR OFF LINE        80342840
1205 0 70C2                    MDX      READ1&1   BRANCH TO TAKE DEV OFF LN     80342850
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                         *                                               *      80342860
1206 1 4C80 11C7         RD106 BSC   I  READ1     RETURN TO CALLER      *      80342870
                         *                                               *      80342880
                         *                  CONSTANTS                    *      80342890
                         *                                               *      80342900
1208 0 0000              A8TID DC       0         ABORT INDICATOR               80342910
1209 0 0000              RDINO DC       0         READ INDICATOR                80342920
120A 0 0000              DVOL  DC       0         DEV OFF LINE IND              80342930
1208 0 1000              RDFCN DC       /1000     CONSTANT FOR CARD READ FCN    80342940
120C 0 EC00              KEC00 DC       /EC00     CONSTANT HEX EC00             80342950
1200 0 0007              K7    DC       7         CONSTANT DEC 7                80342960
                         *                                               *      80342970
                         *     CARDN I/O PARAMETER LIST                  *      80342980
                         *                                               *      80342990
120E 0 0000              LIST1 DC       *-*       LINK/BUSY                     80343000
120F 0 0000                    DC       0         EXIT TYPE                     80343010
1210 0 0000                    DC       *-*       SYSTEM RESERVED               80343020
1211 0 0000                    DC       *-*       SYSTEM RESERVED               80343030
1212 0 0000                    DC       *-*       SYSTEM RESERVED               80343040
1213 0 0000                    DC       *-*       SYSTEM RESERVED               80343050
1214 0 0000                    OC       0         ERROR INDICATOR               80343060
1215 0 1000                    DC       /1000     CONTROL PARAMETER             80343070
1216 0 FF6F                    DC       INOUT-1   I/O ADDRESS                   80343080
                         *                                               *      80343090
                         ************************************************      80343100
                         *        MPXDM - ERROR A8ORT ROUTINE            *      80343110
                         ************************************************      80343120
                         *                                               *      80343130
                         *                ** A8RT **                     *      80343140
                         *                                               *      80343150
                         *     THIS ROUTINE IS ENTERED WHENEVER MPXOM    *      80343160
                         *     DETECTS AN ERROR CONDITION.               *      80343170
                         *                                               *      80343180
                         *     ROUTINE FUNCTIONS ARE AS FOLLOWS          *      80343190
                         *                                               *      80343200
                         *     1.CALL MPXDM LOG ROUTINE TO OUTPUT THE    *      80343210
                         *       ERROR MESSAGE DEFINED IN THE A8ORT      *      80343220
                         *       CALL.                                   *      80343230
                         *     2.CALL TSCTL SUBROUTINE TO UNLOCK TIME    *      80343240
                         *       SHARE MODE IF IT IS LOCKED IN.          *      80343250
                         *     3.CALL MTERM SUBROUTINE TO DE-EXECUTE     *      80343260
                         *       THE DFT IF IT IS EXECUTING.             *      80343270
                         *     4.EXIT VIA VECTOR A8RTX(FFD8)             *      80343280
                         *       A.IF THE ERROR WAS DUE TO OR DURING     *      80343290
                         *         AN MPXDM OPERATION,IT IS CONSIDER-    *      80343300
                         *         ED UNRECOVERABLE AND THE EXIT VIA     *      80343310
                         *         A8RTX WILL RESULT IN A CALL ON THE    *      80343320
                         *         MPX EXIT ROUTINE.A CALL ON EXIT       *      80343330
                         *         WILL TERMINATE ON-LINE OPERATIONS.    *      80343340
                         *       8.IF THE ERROR WAS DUE TO A DFT         *      80343350
                         *         OPERATION,IT IS CONSIDERED RESTART    *      80343360
                         *         RECOVERABLE.THE EXIT VIA A8RTX        *      80343370
                         *         WILL CAUSE A BRANCH TO THE MPXDM      *      80343380
                         *         MCTRL ROUTINE.TIME SHARE WILL NOT     *      80343390
                         *         BE ENDED,AND THE C.E. MAY CALL FOR    *      80343400
                         *         A DFT RE-LOAD FROM THE C.E.SWITCHS    *      80343410
                         *                                               *      80343420
                         *                CALLING SEQUENCE               *      80343430
                         *                                               *      80343440
                         *                BSI I A8ORT                    *      80343450
                         *                DC    EID - ERROR ID           *      80343460
                         *                DC    WDCNT-MSG WORD CNT       *      80343470
                         *                C(ABORT) = A8RT                *      80343480
                         *                                               *      80343490
                         *     CALLED ROUTINES                           *      80343500
                         *                                               *      80343510
                         *        1. LOG - MPXOM PRINT ROUTINE           *      80343520
                         *        2. MCTRL-MPXDM CONTROL ROUTINE VIA     *      80343530
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                        *                  VECTOR ABRTX.                *      80343540
                        *          3. EXIT -MPX EXIT ROUTINE VIA        *      80343550
                        *                  VECTOR ABRTX.                *      80343560
                        *                                               *      80343570
                        *      CALLED SUBROUTINES                       *      80343580
                        *                                               *      80343590
                        *          1. TSCTL-LOCK/UNLOCK TIME SHARE      *      80343600
                        *          2. MTERM-TERMINATE OFT OPERATION     *      80343610
                        *                                               *      80343620
                        * POSSIBLE ABORT CONDITIONS                      *      80343630
                        *                                               *      80343640
                        * NONE                                          *      80343650
                        *                                               *      80343660
                        * ROUTINE ENTRY     ABRT                        *      80343670
                        * ROUTINE EXIT      ABRXT                       *      80343680
                        *                                               *      80343690
                        ************************************************      80343700
                        *                                               *      80343710
1217 0 0000             ABRT  OC      *-*         RETURN ADDRESS              80343720
                        *                                                     80343730
1218 0 C400 FFF3              LO   L  OMBGN       SET ACTIVE POLL             80343740
121A 0 0400 FFDA              STO  L  ACTIV        * TO MPXDM                 80343750
121C 1 6780 1217              LDX  I3 ABRT        SET IX TU CALL STRING       80343760
121E 0 C300                   LO    3 0           FETCH ERROR CUDE            80343770
121F 0 0017                   STO     ABM1        STORE IN MESSAGE STRING     80343780
1220 0 C301                   LD    3 1           FETCH WORD CUUNT            80343790
1221 0 0013                   STO     ABMSG       SET IN MESSAGE STRING       80343800
1222 0 4480 FFF8        ABRT1 8SI  I  LOG         CALL LOG ROUTINE            80343810
1224 1 1235                   OC      A8MSG       MESSAGE ADDRESS             80343820
1225 1 1222                   OC      ABRT1       BUSY RETURN                 80343830
1226 0 0000                   OC      /0000       TERMINATION TYPE            80343840
                        *                                                     80343850
1227 1 C400 1142              LD   L  CTLRD       FETCH CONTROL CARD IND      80343860
1229 0 4820                   8SC     Z           SKIP IF OFF                 80343870
122A 0 7006                   MDX     ABRXT       BYPASS OXEQ OFT             80343880
122B 0 6300                   LOX   3 0           SET TO UNLUCK TIME SHARE    80343890
122C 1 4400 0A61              BSI  L  TSCTL       BRNH TO UNLOCK TIMESHARE    80343900
122E 1 4400 0A40              8SI  L  MTERM       DXEQ PRESENT PROGRAM        80343910
1230 0 6803                   STX     OTABT       SET OFT ABORTED INU         80343920
                        *                                                     80343930
1231 0 4C80 FFD8        ABRXT BSC  I  ABRTX       EXIT ABRT RUUTINE           80343940
                        *                                                     80343950
1233 1 0AA2             EXTAO OC      EXIT        UNRECOVERABLE A8URT EXIT    80343960
1234 0 0000             OTABT OC      0           OFT ABORTED INUICATUR       80343970
                        *                                           *         80343980
                        *              ABORT MESSAGE STRING         *         80343990
                        *                                           *         80344000
1235 0 0000             ABMSG OC      /0000       LINE NMBR/WORD CUUNT        80344010
1236 0 0000                   DC      /0000       HEX/DEC = HEX OUTPUT        80344020
1237 0 0000             ABM1  OC      0           MESSAGE ID                  80344030
123B 0 0000             A8M2  OC      *-*         MOD 1                       80344040
1239 0 0000             ABM3  OC      *-*         MUU 2                       80344050
123A 0 0000             ABM4  DC      *-*         MOD 3                       80344060
123B 0 0000             ABM5  OC      *-*         MOD 4                       80344070
                        *                                                     80344080
                        ************************************************      80344090
                        *          CAROZ SU8R FOR IBM SYSTEM PROGRAMS   *     80344100
                        ************************************************      80344110
                        *                                               *     80344120
                        *      NOTE  THIS SUBR IS THE SAME AS CARDN     *     80344130
                        *            EXCEPT FUR THE FOLLOWING THINGS    *     80344140
                        *                                               *     80344150
                        *              1. SUPORTS ONLY ONE 1442         *     80344160
                        *              2. ALLOWS ONLY TYPE 1 EXITS      *     80344170
                        *              3. MUST RESIDE IN CALLING PRUGRAM*     80344180
                        *              4. READS UNLY IN C.I. FURMAT     *     80344190
                        *              5. STURAGE PROTECTS 9 WORDS OF   *     80344200
                        *                   THE LIST ALWAYS             *     80344210
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                        *              6. UOES NOT REMOVE PUNCH STUP BIT    *  80344220
                        *                  FROM I/O AREA AFTER A PUNCH      *  80344230
                        *                  OPERATION                        *  80344240
                        *                                                   *  80344250
                        ****************************************************  80344260
                        *                                                        80344270
                        *      CARD OEVICE TABLE EQUATES                         80344280
                        *                                                        80344290
0003 0                  CORDI EQU     3           PAST NOT READY INDICATOR       80344300
0004 0                  CORDC EQU     4           READ CARD IMAGE                80344310
0006 0                  CDROP EQU     6           READ PACKED                    80344320
0008 0                  CUWRT EQU     8           PUNCH                          80344330
000A 0                  CDFED EQU     10          FEED                           80344340
000C 0                  CUSSL EQU     12          STACKER SELECT                 80344350
000E 0                  CUSEN EQU     14          SENSE                          80344360
0010 0                  CDSNR EQU     16          SENSE/RESET                    80344370
0012 0                  COOPC EQU     18          OPCUP SUBR ENTRY POINT         80344380
                        *                                                        80344390
                        *      CALL SECTION                                      80344400
                        *                                                        80344410
123C 0 0000             CARDZ OC      0           CALL ENTRY PUINT               80344420
123D 0 4480 0075              BSI  I  $IOSA       CALL IOSAVE                    80344430
123F 0 0102                   STO  X1 SYSR1       SAVE CALL AODR IN LIST         80344440
1240 0 1090                   SLT     16                                         80344450
1241 0 D104                   STO  X1 SYSR3       SAVE LEV/AREA IND IN LIST      80344460
1242 0 C039                   LO      CDINI                                      80344470
1243 0 0103                   STO  X1 SYSR2       PUT INT ENTRY ADOR IN LIST     80344480
1244 0 637F                   LDX   3 CON         XR3 POINTS TU FIXED AREA       80344490
1245 0 6680 0009              LDX   I2 $1442      XR2 POINTS TO OEVICE TA8LE     80344500
1247 0 720E                   MUX    2 -DVSTR                                    80344510
1248 0 C100                   LD     X1 LINK8     TEST FUR LINK ERROR            80344520
1249 1 4420 1259              BSI    L  CDCER,Z   8RANCH IF LINK/BUSY NOT 0      80344530
124B 0 C107                   LD     X1 CP        TEST FOR ON/OFF FUN            80344540
124C 0 188C                   SRT      12                                       80344550
124D 1 4C20 1262              8SC    L  CU81,Z    8RANCH IF NOT ON/OFF FUNCT     80344560
124F 0 1084                   SLT      4          SET ON/OFF-LINE INUICATUR      80344570
1250 0 2E40 FFFB              STS    L2 DVONF,/40                               80344580
1252 0 D2F8                   STO    X2 UVONF                                   80344590
1253 0 2E41 FFF8              STS    L2 OVONF,/41                               80344600
1255 0 C306                   LO     X3 $01-CUN   SET ERRUR PARAMETER            80344610
1256 0 0106                   STO    X1 ERP                                     80344620
1257 0 4480 0076        CDCEX 8SI    I  $IOEX     EXIT VIA IOEXIT                80344630
1259 0 0000             CUCER OC      0           ILLEGAL CALL TO CARDN          80344640
125A 0 0883                   XIO    X3 $MK1-CON  MASK                           80344650
125B 0 08B5                   XIO    X3 $MK2-CON                                80344660
125C 0 4480 00C7              8SI    I  $RSAV     CALL RSAVE                     80344670
125E 0 4480 0078              BSI    I  $IOER     CALL ERROR SUBR                80344680
1260 0 000A                   DC       10                                       80344690
1261 0 0002                   OC       2                                        80344700
1262 1 4408 1259        COB1  BSI    L  CDCER,&   BRANCH IF ILLEGAL FUNCTION      80344710
1264 0 9308                   S      X3 $D4-CUN   TEST FUNCTION CODE FUR 1-4      80344720
1265 1 4430 1259              BSI    L  CDCER,-Z  8RANCH IF ILLEGAL FUNCTION      80344730
1267 0 8307                   A      X3 $D2-CUN   IS FUN READ/PUNCH FUNCTION      80344740
1268 1 4C30 1271              BSC    L  COB1A,Z-  8RANCH IF NOT R/P               80344750
126A 0 C580 0008              LO     I1 IUAP      TEST FUR VALID WURD CUUNT       80344760
126C 1 4408 1259              BSI    L  CDCER,&   8RANCH IF Z OR - WU COUNT       80344770
126E 0 902C                   S        CUO80      TEST FUR WD CNT GREATER         80344780
126F 1 4430 1259              8SI    L  CUCER,-Z    THAN 80--BRANCH YES           80344790
1271 0 C2F8             CD81A LD     X2 OVONF     TEST FUR DEVICE UN-LINE         80344800
1272 1 4C20 1277              8SC    L  CDB2,Z    BRANCH IF ON-LINE               80344810
1274 0 C307                   LU     X3 $02-CON   TELL CALL THAT DEVICE IS        80344820
1275 0 0106                   STO    X1 ERP         OFF-LINE                      80344830
1276 0 70E0                   MOX       CDCEX     EXIT                            80344840
1277 0 08B3             CDB2  XIO    X3 $MK1-CUN  MASK                           80344850
1278 0 08B5                   XIO    X3 $MK2-CON                                80344860
1279 0 4480 0063              BSI    I  $IOST     CALL IOSET                     80344870
127B 0 0001                   DC       1          NUMBER UF PARAMETERS           80344880
127C 1 12DF             CDINI DC       COINT      AUOR UF IOCR INT SECTIUN       80344890
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127D 0 0BB3              XIO  X3 $MK1-CON  MASK                          80344900
127E 0 0BB5              XIO  X3 $MK2-CON                               80344910
127F 0 0105              STO  X1 SYSR4     SAVE ADDR OF I/O BUSY IND    80344920
1280 0 D013              STO     CDBSY+1   POT IN SET BUSY INSTRUCTION   80344930
1281 0 6904              STX   1 COPQ1     SET OP PUTQ CALL             80344940
1282 0 6A02              STX   2 COPQ2                                  80344950
1283 0 4480 010A         BSI  I  $PUTO     ENTER LIST IN QUEUE          80344960
1285 0 0000       CDPQ2  DC       *-*       LCT AOOR                     80344970
1286 0 000D       CDPQ1  OC       *-*       LIST ADDR                    80344980
1287 0 0000              OC       0         PRIORITY                     80344990
1288 1 4C20 1293         BSC  L  COBSY,Z   BRANCH IF NOT FIRST Q ENTRY  80345000
128A 0 4011              BSI     COSIO     BRANCH TO START I/O SECTION  80345010
128B 1 4C08 1293         BSC  L  CDBSY,&   BRANCH FUNCTION              80345020
1280 0 D106              STO  X1 ERP       SET ERROR PARAMETER          80345030
128E 0 6A02              STX   2 CDGQ1     SET UP GETQ CALL             80345040
128F 0 4480 0109         BSI  I  $GETO     CALL GETQ                    80345050
1291 0 0000       CDGQ1  DC       *-*       LCT ADDR                     80345060
1292 0 70C4              MOX     CDCEX     EXIT                         80345070
1293 0 7401 0000  CDBSY  MDX  L  *-*,1     INCREMENT I/O BUSY INDICATR  80345080
1295 0 1000              NOP                                            80345090
1296 0 4480 00FE         BSI  I  $STPR     STORAGE PROTECT LIST         80345100
129B 0 0009       CDSP1  DC       9         NO. OF PARAMETER             80345110
1299 0 C000              LD      *         FORCE TYPE 1 EXIT            80345120
129A 0 70BC              MDX     CDCEX     EXIT                         80345130
                  *                                                     80345140
                  *      START I/O SECTION                              80345150
                  *                                                     80345160
129B 0 0050       CDD80  DC       80        CONSTANT                     80345170
129C 0 0000       CDSIO  DC       0         START I/O ENTRY POINT        80345180
129D 0 C0FE              LD      COSIO     SAVE RETURN ADDRESS          80345190
129E 0 D3B8              STO  X3 $WK5-CON                               80345200
129F 0 C2F8              LD   X2 OVONF     TEST FOR OFF-LINE            80345210
12A0 1 4C20 12A5         BSC  L  COS1,Z    BRANCH IF ON-LINE            80345220
12A2 0 C307              LD   X3 $D2-CON   RETURN WITH OFF-LINE         80345230
12A3 0 4C80 0037  CDSEX  BSC  I  $WK5                                   80345240
12A5 0 0A0E       CDS1   XIO  X2 CDSEN      TEST FOR NOT READY           80345250
12A6 1 4C04 1205         BSC  L  CONOT,E   BRANCH IF NOT READY          80345260
12A8 0 1010              SLA     16        CLEAR PAST NOT RDY INDICATR  80345270
12A9 0 0203              STO  X2 CDRDI                                  80345280
12AA 0 C3AB              LD   X3 $DM1-CON   SET NO RESPONSE INDICATOR   80345290
12AB 0 02F8              STO  X2 DVRES                                  80345300
12AC 0 C107              LD   X1 CP        DETERMINE FUNCTION           80345310
12AD 0 180C              SRA      12                                    80345320
12AE 1 4C04 12C6         BSC  L  CDFNE,E   8RANCH FUNCTION RD/FEED      80345330
12B0 0 1801              SRA      1                                     80345340
1281 1 4C04 1288         BSC  L  COFPH,E   BRANCH FUNCTION PUNCH       80345350
12B3 0 0A0C       COFSS  XIO  X2 COSSL      FUNCTION IS STACKER SELECT   80345360
12B4 0 1010              SLA     16         CLEAR NO RESPONSE INO       80345370
12B5 0 D2FB              STO  X2 DVRES                                  80345380
1286 0 C306              LD   X3 $01-CON   FONCTION IS COMPLETED        80345390
1287 0 70E8              MOX     COSEX                                  80345400
1288 0 C108       CDFPH  LD   X1 IOAP       SET UP IOCC                  80345410
1289 0 8306              A    X3 $01-CON                                80345420
12BA 0 D208              STO  X2 CDWRT                                  80345430
1288 0 C108              LO   X1 IOAP      POT IN PONCH STOP BIT        80345440
128C 0 8580 0008         A    11 IOAP                                   80345450
128E 0 D3B7              STO  X3 $WK4-CON                               80345460
12BF 0 C480 0036         LD   I  $WK4                                   80345470
12C1 0 EBA8              OR   X3 $D8-CON   OR IN THE BIT                80345480
12C2 0 0480 0036         STO  I  $WK4                                   80345490
12C4 0 0A08              XIO  X2 CDWRT     START PONCH                  80345500
12C5 0 7007              MDX     CDSEA     EXIT                         80345510
12C6 0 1801       CDFNE  SRA      1         IS FON READ OR FEED          80345520
12C7 1 4C04 12D3         BSC  L  CDFFD,E   BRANCH IF FEED               80345530
12C9 0 C108       CDFRD  LD   X1 IOAP       SET OP READ IOCC             80345540
12CA 0 8306              A    X3 $D1-CON                                80345550
12C8 0 0204              STO  X2 CDRDC                                  80345560
12CC 0 0A04              XIO  X2 CDROC     START READ                   80345570
```



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12C0 0 C103       CDSEA  LD   X1 SYSR2     SET INTERRUPT BRANCH         80345580
12CE 0 02F5              STO  X2 DVISS                                  80345590
12CF 0 C3AB              LD   X3 $DM1-CON  SET INT RESPONSE INDICATOR   80345600
12D0 0 02FB              STO  X2 DVRES                                  80345610
12D1 0 1010              SLA     16        INDICATE FUNCTION STARTED    80345620
12D2 0 70D0              MOX     CDSEX     EXIT                         80345630
12D3 0 0A0A       CDFFD  XIO  X2 CDFED      FEED A CARD                  80345640
12D4 0 70F8              MDX     CDSEA     EXIT                         80345650
12D5 0 C203       CDNOT  LD   X2 CDRDI      WAS CARD READY ON LAST CALL  80345660
12D6 1 4C20 12A3         BSC  L  CDSEX,Z   BRANCH IF NO                 80345670
12D8 0 C3E1              LD   X3 $D3-CON   SET IND FOR NOT READY        80345680
12D9 0 D203              STO  X2 CDRDI                                  80345690
12DA 0 4480 0078         BSI  I  $IOER     TELL OPERATOR THAT 1442 IS   80345700
12DC 0 000F              OC       15         NOT READY                  80345710
12DD 0 0001              DC       1                                     80345720
12DE 0 70F6              MDX     CDNOT     EXIT                         80345730
                  *                                                     80345740
                  *      INTERRUPT SECTION                              80345750
                  *                                                     80345760
12DF 0 637F       CDINT  LDX     3 CON      XR3 POINTS TO FIXED AREA     80345770
12E0 0 1010              SLA     16        RESET INT RESPONSE IND       80345780
12E1 0 D2FB              STO  X2 DVRES                                  80345790
12E2 0 C201              LD   X2 DVXEQ     XR1 POINTS TO LIST           80345800
12E3 0 D3B7              STO  X3 $WK4-CON                               80345810
12E4 0 6580 0036         LDX  I1 $WK4                                   80345820
12E6 0 D210              STO  X2 CDSNR     SAVE FOR OPCOP SUBR CALL     80345830
12E7 0 0A10              XIO  X2 CDSNR     SENSE/RESET DSW              80345840
12E8 0 EAFA              OR   X2 DVDOW     OR PROG INDICATORS           80345850
12E9 0 D2F9              STO  X2 DVDSW     SAVE DSW                     80345860
12EA 0 1004              SLA      4        TEST FOR OPCOP BIT           80345870
12EB 0 4C90 0074         BSC  I  $IMIC,-   BRANCH IF NOT ON             80345880
12ED 0 100C              SLA     12        CLEAR OR WORD                80345890
12EE 0 D2FA              STO  X2 DVDOW                                  80345900
12EF 0 C2F9              LD   X2 DVDSW     TEST FOR ERROR               80345910
12F0 0 1002              SLA      2                                     80345920
12F1 1 4C10 131F         BSC  L  CDFOK,-   BRANCH IF NO ERROR           80345930
12F3 0 0BB3              XIO  X3 $MK1-CON  MASK                         80345940
12F4 0 0BB5              XIO  X3 $MK2-CON                               80345950
12F5 0 4480 00C7         BSI  I  $RSAV     SAVE REGISTERS               80345960
12F7 0 C2F6              LD   X2 DVERR     INCREMENT ERROR COUNT        80345970
12F8 0 8306              A    X3 $D1-CON                                80345980
12F9 0 D2F6              STO  X2 OVERR                                  80345990
12FA 0 C3E1              LD   X3 $D3-CON   SETUP TO STUP FUTURE         80346000
12FB 0 D203              STO  X2 CDRDI       NOT READY ERROR MESS       80346010
12FC 0 C2F9              LO   X2 OVDSW     SETUP TO TEST TYPE OF        80346020
12FD 0 1005              SLA      5          ERROR                      80346030
12FE 1 4C10 1306         BSC  L  CDE1,-    8RANCH NOT PARITY            80346040
1300 0 4480 0078         8SI  I  $IOER     CALL IOERR SOBR              80346050
1302 0 0000              DC       0                                     80346060
1303 0 0001              DC       1                                     80346070
1304 0 C308              LD   X3 $D4-CON   LD ERROR CODE                80346080
1305 0 7020              MDX     COCON     CONTINUE OPERATION           80346090
1306 0 1001       CDE1   SLA      1        TEST STORAGE PROTECT         80346100
1307 1 4C10 1310         BSC  L  CDE2,-    8RANCH IF NOT STURAGE PROT   80346110
1309 0 4480 0078         BSI  I  $IOER     CALL I/O ERROR SUBROUTINE    80346120
130B 0 0005              DC       5                                     80346130
130C 0 0002              DC       2                                     80346140
130D 0 4480 00C6         BSI  I  $ECRL     FORCE RELOAD                 80346150
130F 0 0000              DC       0                                     80346160
1310 0 1001       CDE2   SLA      1        TEST OTHER ERRORS            80346170
1311 1 4C10 1319         BSC  L  CDE3,-    BRANCH NOT FEED CHECK        80346180
1313 0 4480 0078         BSI  I  $IOER     CALL IOERR                   80346190
1315 0 0019              OC       25                                    80346200
1316 0 0001              DC       1                                     80346210
1317 0 C309              LD   X3 $D5-CON   LD ERROR CODE                80346220
1318 0 700D              MDX     CDCON     CONTINUE                     80346230
1319 0 4480 0078  COE3   BSI  I  $IOER     ANY ERROR                    80346240
131B 0 001E              OC       30                                    80346250
```

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131C 0 0001              DC      1                                  80346260
131D 0 C341              LD   X3 $D6-CDN   LD ERROR CODE            80346270
131E 0 7007              MDX     CDCON                              80346280
131F 0 1001        CDFOK SLA     1         TEST LAST CARD           80346290
1320 1 4C10 1325         BSC  L  CDCDN-1,- BRANCH IF NOT LAST CARD  80346300
1322 0 0A0A              XID  X2 CDFED     FEED OUT LAST CARD       80346310
1323 0 C3A8              LD   X3 $D8-CDN   SET ERROR CODE           80346320
1324 0 7001              MDX     CDCON     CONTINUE                 80346330
1325 0 C306              LD   X3 $D1-CDN   LD OKAY ERROR CODE       80346340
1326 0 2D40 0006   CDCON STS  L1 ERP,/40   PUT ERROR CODE IN I/O LIST 80346350
1328 0 D106              STO  X1 ERP                                80346360
1329 0 08B3        CDCN2 XID  X3 $MK1-CON  MASK                     80346370
132A 0 0885              XIO  X3 $MK2-CON                           80346380
132B 0 6A02              STX   2 *&2       CALL GETQ                80346390
132C 0 4480 0109         BSI  I  $GETO                              80346400
132E 0 0000              DC      *-*                                80346410
132F 0 4480 00FF         BSI  I  $STRL     UNSTORAGE PRDTECT LIST   80346420
1331 0 0009              DC      9         CONSTANT                 80346430
1332 0 C580 0005         LD   I1 SYSR4     RESET I/D BUSY INDICATOR 80346440
1334 0 9306              S    X3 $D1-CON                            80346450
1335 0 D580 0005         STO  I1 SYSR4                              80346460
1337 0 08AF              XIO  X3 $UMK1-CON UNMASK                   80346470
1338 0 0BB1              XIO  X3 $UMK2-CDN                          80346480
1339 0 C201              LD   X2 DVXEQ     OPERATE ON NEXT LIST     80346490
133A 0 4C98 0074         BSC  I  $IMIC,&-  EXIT IF NO MORE TO DO    80346500
133C 0 D3B7              STO  X3 $WK4-CON                           80346510
133D 0 6580 0036         LDX  I1 $WK4      XR1 IS LIST POINTER      80346520
133F 1 4400 129C         BSI  L  CDSIO     CALL IO START SECTION    80346530
1341 0 4C98 0074         BSC  I  $IMIC,&-  EXIT IF STARTED          80346540
1343 0 70E2              MDX     CDCON     BRANCH IF COMPLETED      80346550
1344 0 0AC9        PGSIZ DC      *-1-DMPID+150   PRDGRAM SIZE       80346560
                   *                                          *     80346570
1346   0001              END     DMIN                               80346580
  ND STATEMENTS FLAGGED IN THE ABOVE ASSEM8LY
```



```
$ABRT  00A4
$AESP  002C
$AIIN  00DD  0CCE 0CD0
$ANEO  00AE
$BDSH  010F
$BIND  0003
$BKEX  0108
$BKSA  0107
$BMIC  0028
$BTAD  006A
$BULK  007C
$CBAS  00B2  080F 0D49
$CEML  0100  0001
$CLK   005C
$CLNT  006F
$CDRE  00A8
$C1TV  0115
$C10V  011E
$C11V  011F
$C12V  0120
$C13V  0121
$C14V  0122
$C15V  0123
$C16V  0124
$C17V  0125
$C18V  0126
$C19V  0127
$C2TV  0116
$C20V  0128
$C21V  0129
$C22V  012A
$C23V  0128
$C3TV  0117
$C4TV  0118
$C5TV  0119
$C6TV  011A
$C7TV  011B
$C8TV  011C
$C9TV  011D
$DAOP  00E2  0CD6
$DAY   006C
$DINP  00E1  0CD3
$DIRC  00FD
$DKPH  00E7  0C8C 0CBE 0CC0
$DM1   002A  12AA 12CF
$DM10  002B
$DM50  005F
$DPME  0083
$DQLS  00E6
$DSW   005B
$DXEQ  005A
$D1    0085  1255 12B6 12B9 12CA 12F8 1325 1334
$D10   0070
$D11   0071
$D12   0072
$D13   0097
$D14   009F
$D2    0086  1267 1274 12A2
$D24   00BD
$D25   008E
$D3    0060  12D8 12FA
$D319  00AF
$D320  008D
$D321  0090
$D4    0087  1264 1304
$D5    0088  1317
$D6    00C0  131D
$D7    0089
```

```
$DB     0027  12C1 1323
$D9     00BF
$ECDK   0101
$ECPR   0099
$ECRL   00C6  130D
$EDEN   006B
$EEND   0073
$EITC   005E
$ERMS   00BB
$EXCM   009C
$EXIT   00B6  0079 0AAE
$FFF0   00B1
$FF00   0092
$FFB7   0094
$FIBF   00E4
$FMIC   006E
$F000   0093
$F360   00C5
$F800   00B1
$GETQ   00FC
$GETO   0109  12BF 132C
$IBTA   0065
$ICLN   0069
$IDSK   010B
$IMIC   0074  099F 12EB 133A 1341
$IODR   0110
$IOER   0078  125E 120A 1300 1309 1313 1319
$IOEX   0076  1257
$IOSA   0075  123D
$IOST   0063  002E 1279
$IOTT   0062
$IPRT   010C
$ITB    002D
$LEXC   009D
$LINK   00BE
$LORG   00A6
$LST    007D
$MATP   00DC  0CC6
$MBDR   009E
$MESG   0007
$MK1    0032  002A 0AB0 0BB2 0C29 0D4D 125A 1277 127D 12F3 1329
$MK2    0034  002B 0ABE 0BB4 0C2B 0D4E 1258 1278 127E 12F4 132A
$M1CS   0039
$NILV   007B
$NPID   003B
$NPIN   00AB
$NQUE   007A
$PAPT   00DB  0CA5
$PAUS   0061
$PI00   00A0
$PI11   00A2
$PRNT   00BA
$PROC   0096
$PRTT   0064
$PSA    00C3
$PUTQ   00FB
$PUTO   010A  12B3
$QLCT   00BC
$QUEA   0111
$QZEX   009B
$QZSA   009A
$RELD   010D
$ROAD   00C1
$RSA    0102
$RSAV   00C7  125C 12F5
$RSQ    0103
$RS1    0104
$RS2    0105
```



```
$RS3    0106
$SCHQ   00E5
$SEBT   0098
$SETV   0114
$SMIC   008F
$SORG   00A7
$SRTV   0113
$STPR   00FE  1296
$STQT   0079
$STRL   00FF  132F
$STRT   0000
$SYS    007E
$TASK   003B
$TDIA   0059
$TIMA   003C
$TIMB   003D
$TIM1   003E
$TMAC   0004
$TMBC   0005
$TMBZ   00FA
$TMCC   0006
$TOUT   0095
$TRAC   0009
$TSLK   00B0  0A63 0A67
$TSPR   00C2
$TSST   0077  0A6E
$TVEX   00AD
$TVLO   0067
$TVSA   00AC
$TVST   010E
$TVWK   0068
$TYPE   00B9  006A 0DED
$TYPH   00EF  0CAB 0CAD 0CAF 0CB1 0C83 0CB5 0CB7 0C89
$T1BS   00B4
$T2BS   00B5
$UMK1   002E  0AC2 0BBE 0BEA 0BF1 0061 1337
$UMK2   0030  0AC3 0BC0 0BF5 0D62 1338
$UPDA   00C4
$UT     0029
$UTIL   0025
$VCOR   0066
$VCTV   0112
$WK4    0036  12BE 12BF 12C2 12E3 12E4 133C 1330
$WK5    0037  129E 12A3
$XEQ1   003F
$YEAR   006D
$0FFF   00BA
$0FF8   0082
$0F00   00A5
$00FF   0083
$00F0   00A9
$000F   00AA
$01B0   00BC
$0500   0080
$0600   007F
$1STC   0091
$1053   00D0
$1442   00D9  0CC9 0CC8 1245
$1443   00D8  004E 0CC3
$1627   00E3  0CA8
$2000   008B
$2310   00C8
$2790   0053  0B9D 08A5 0BB8 0CD9 0CDB 0D59
$B000   0084
$8001   00F7
$8002   00F8
$8004   00F9
$8008   0087
```

```
$8D10   00B8
ABMSG   1235  1221 1224
ABM1    1237  121F
ABM2    123B  0D42 09A5 09AD 09D2 0B33 0B51 0B7F 0CF6 0F54 0FFB 1026 105B 1061
              106E 107D 1085 1105 110D 111D
ABM3    1239  0B53 0BF3 0CEC 0F26 0F5F 101D 1035 1069 1074 1083 10DD 1118
ABM4    123A  0B56 0BC5 0BF7 1D4A 104F 1D5A
ABM5    123B  0BC8
ABORT   FFE7  0019 0B3E 0B64 0B6C 0B81 DB8A DBCC 0BDE 0BF9 0C06 0CF8 0F2C 0F61
              0F6F 0FB2 0FC7 0FE5 0FEE 10D5 100E 1028 103B 105C 106F 107E 1087
              1D97 10B7 10C7 10E3 10F5 1111 111E 115B 1162 117E 1189 118F 119A
              11EE
ABRT    1217  D092 121C
ABRTX   FFD8  DD1B 0064 0F2B 103A 10E2 10EA 1136 1231
ABRT1   1222  1225
ABRXT   1231  122A
ABTID   1208  09C8 11E3 11E9 11ED
ACTAT   0C64  0B76
ACTIV   FFDA  0015 0AD0 0AD1 0DBF 121A
ADRS    11C4  114C 1150 11A4 11AC 11B1 11BE
ADR1    0090  0010
ADR2    0091  0013
ADR3    0092  0018
ADR4    0093  001C
ADR5    0094  0D25
ADR6    0095  0016
ADR7    0096  001A
ADR8    0097  0063
ARBSY   FFE2  0032 0807 0D4F
A1      0A73  0A62 0A70
BAKUP   0EB6  0E02 0EC0
BASE    009A  0022
BCKUP   0EEF  0EBD 0EC7 0EDC 0EE9
BEGIN   FFF5  003B
BGIN    0EFC  00A4 0F02
BGIN1   0F0C  0F11
BGIN2   0F14
BGIN3   0F1B
BKP1A   0EC9  0EBC
BKUP1   0EC2  0EBF
BKUP2   0ECF  0EB9 0ED9
BKUP3   0EDC  0ED1
BKUP4   0EE2  0EC8 0EE8
BPXT0   0EBA  0ED4
BPXT1   0EC0  0EEC
BPXT2   0EDA  0ECB
BPXT3   0EED  0EEB
BYICR   FFEC  D804 0B0B 0D4A 0D66
CARDZ   123C  11C8
CDBSY   1293  12B0 1288 128B
CD81    1262  124D
CDB1A   1271  126B
CDB2    1277  1272
CDCER   1259  1249 1262 1265 126C 126F
CDCEX   1257  1276 1292 129A
CDCNT   0FCD  0F1F 0F25 0F31 0F31 0F32 0F35 0F53 0F67 0FE1
CDCN2   1329
CDCON   1326  1305 1318 131E 1320 1324 1343
CDD80   1298  126E
CDE1    1306  12FE
CDE2    1310  1307
CDE3    1319  1311
CDFE0   000A  12D3 1322
CDFFD   12D3  12C7
CDFNE   12C6  12AE
CDFOK   131F  12F1
CDFPH   12B8  12B1
CDFRD   12C9
```



```
CDFSS   1283
CDGO1   1291  12BE
CDINI   127C  1242
CDINT   12DF  127C
CDNOT   12D5  12A6 12DE
CDOPC   0012
CDPO1   12B6  1281
CDPO2   1285  1282
CDRDC   0004  12CB 12CC
CDROI   0003  12A9 12D5 12D9 12FB
CDROP   0006
CDSEA   12CD  12C5 12D4
CDSEN   000E  12A5
CDSEX   12A3  12B7 12D2 12D6
CDSID   129C  12BA 129D 133F
CDSNR   0010  12E6 12F7
CDSP1   129B
CDSSL   000C  12B3
CDS1    12A5  12A0
CDWRT   0008  12BA 12C4
CESAV   DA3F  09BC 0A09
CESWS   0A36  09B8 09F2 0A05 0A2D 0AA7
CIDXT   0A59
CKADR   1019  0F7E 1020 11BA
CKAD1   1020
CKIO    0A4D  09CD 0A45 0A59 0A5B
CKIO1   0A4F  0A54
CKIO2   0A5B  0A52
CKWRD   113C  10F1 1101
CK1     0FD2  0F25
CK2     10D1  1034
CK4     1141  10DC
CMPAT   0FD4  0FC3
CODE    FFC0  000E 0011 0012 0014 0015 0017 0019 001B 0021 0026 0028 0032 0034
              0087 0DCF 0DD4 0E26 0E6C 0E7C 0E95
CON     007F  0029 002A 002B 0ABC 0ABD 0ABE 0AC2 0AC3 0B0F 0D47 0D49 0D4D 0D4E
              0D61 0D62 1244 1255 125A 125B 1264 1267 1274 1277 1278 127D 127E
              129E 12A2 12AA 12B6 12B9 12BE 12C1 12CA 12CF 12D8 12DF 12E3 12F3
              12F4 12F8 12FA 1304 1317 131D 1323 1325 1329 132A 1334 1337 1338
              133C
CON1    0FCF  0F59 0F5C 0FA1
CP      0007  1248 12AC
CPTER   0068  0006 0077
CTLCD   0A3B  09B5 09C5 09CB 09CC 0A30
CTLPT   0A74  09ED 0A75 0A81 0A83 0D28
CTLP1   0A7C  0A7F
CTLRD   1142  10EB 1139 1227
CTLXT   0A26  09F0 0A13 0A20
CTL1    09B7  0097 0906 0A26 0A55 0D3B 1144
CTL10   0A1A
CTL11   0A1C  0A16
CTL3    09C4
CTL4    09D7  09C7 09CA
CTL43   0E17
CTL5    09DC  09DB
CTL53   0E16  0DF5
CTL6    09F1  09DB 09DE 09E1 09FB 0A01
CTL7    0A00
CTL8    0A02  09F6
CTL8A   0A05  0A0B
CTL9    0A0D  0A07
CTL9A   0A14  0A04
CTPXT   0A83
CTRXT   1143  10E9 1135
CVCT    0E38  0E25 0E30
C4353   00CA  0083
ODAI    0CCD  0CB4 0C85 0C86 0C87
DDAO    0CD5  0CBA 0CBB
```

```
DDI     0CD2  0CBB 0C89
DECTB   0EA4  0E77
DECTC   0EB2  0ECC
DFTBG   FFF4  0021 0FB6 1024
DFTCF   FFF1  0F0A
DFTCW   FFE0  0C02 0FC1
DFTIA   FFE4  0997 0C1F
DFTID   FFF2  09E4 0A78 0A8B 0A8E 0AC7 0B70 0B7D 0D18 0F07 104D 1115 1128
DFTIS   FFE3  0999 0C22 0C23
DFTDP   FFFD  09E6 09EB 0AB8 0AFD 0B2A 0C41 0CE2 0D0B 0D14 0D1E 0D25 0D30 0D37
              0D75 0D94 0D9F 0E10
DIRXT   099F  099B
DMBGN   FFF3  0014 0ACF 101B 1022 1045 121B
DMCTL   FFDF  0017 0066
DMDVA   0C4A  0D55
DMDVT   0C4C  0BB6 0BBA 0C4A
DMEDT   091D  0090
DMIN    0001  0093 1346
DMINA   000B  000D
DMINB   0036  003B
DMINC   005E  004D 0051 0057 0061
DMIR    0997  0094
DMISS   FFFC  0026 0C2F 0D5C
DMIXT   0066
DMPID   0911  0091 00E1 0913 1048 1344
DM10A   0F30  0F28
DM10B   0F35  0F6D 0FAB
DM10C   0F37  0F38
DM10E   0F41  0F51
DM10F   0F56  0F5B
DM10G   0F65  0F5D
DM10H   0F73  0F69
DM10J   0F7E  0F86
DM10K   0F8A  0FAA
DM10L   0F8E  0FA8
DM10M   0F96  0FA2
DM10N   0F9D  0F94
DM10P   0FA0  0F99
DM10R   0FA3  0F92
DM10S   0FA5  0F9F
DM10T   0FA6  0F90
DM10U   0FAC  0F77
DM10V   0F86  0F80
DM10W   0FB9  0FBF
DM10X   0FC0  0FBC
DM10Y   0FCB  0FAE 0FC5
DM2ID   0098  003F
DM20A   103F  1037
DM20B   1051  10AF
DM20D   1060  1058
DM20E   1073  106B
DM20F   1082  107A
DM20G   108B  1085
DM20H   109B  1095
DM20J   109E  1091
DM20K   10A1  108D
DM20L   10A3  109D
DM20M   10A6  10AB
DM20N   10AD  10A0
DM20P   10B0  1076
DM20R   10BB  10B2
DM20S   10CB  10BD 10C6
DM4AA   10E7  10DF
DM4XT   113A
DM40A   10EC  1134
DM40C   10EF  10FE
DM40D   10F5
DM40E   10F9  10F3
```



```
DM40F   1102
DM40J   1115  110F
DM40K   1135  1102 1143
DM40L   112F  1132
DM40M   1122  111A
DPWK1   0EA0  0E6E 0E72 0E73 0E7E 0E83 0E8A
DPWK2   0EA2  0E7B 0E7F 0E82 0E84 0E86
DTABT   1234  09DF 0F34 1230
DTADR   FFD3  0BAF 0BBC 0BD4 0D45 0D54
DTIVS   FFEE  0C2E 0D5F 0D68
DVASV   0C4B
DVDOW   FFFA  12E8 12EE
DVDSW   FFF9  12E9 12EF 12FC
DVERR   FFF6  12F7 12F9
DVID    FFFD
DVINL   FFFC
DVISS   FFF5  0C2D 0C30 0D5B 0D60 12CE
DVNPR   0000
DVOL    120A  11E4 11F2 11F7 1203
DVDNF   FFF8  0056 0BFD 1250 1252 1253 1271 129F
DVRES   FFFB  12AB 12B5 12D0 12E1
DVSSS   FFF7
DVSTR   FFF2  1247
DVXEQ   0001  12E2 1339
D1442   0CC8  0C73
D1443   0CC2  0C6E
D1627   0CA7  0C69
D2310   0CBB  0C6C 0C6D 0C70 0C71
D2400   0CC5  0C6B 0C6F
D2790   0CD8  0899 0C92 0C93
D5316   0CAA  0C6A
D5455   0CA4  0C68
EAREA   10CF  1044 10A4 10AC 10BF
EDITA   FFD2  0011 0046 0A85 0A88 0AB9 0ABB 0AC7 0ACF 0AD0 0AD7 0AF3 0AF5 0B07
              0B0B 0B0C 0B0D 0810 0825 0B2A 0B28 0B2E 0C15 0C1F 0C22 0C2E 0C2F
              0C3A 0C3C 0CDF 0CE2 0CE3 0CE4 0CE6 0D06 0D08 0D11 0D14 0D15 0D17
              0D22 0D25 0D27 0D2B 0D2D 0D34 0D37 0D38 DD3A 0D43 0D4A 0D4F 0D54
              0D5C 0D5F 0D64 0D65 0D66 0D67 0D68 0D72 DD75 0D77 0D78 0D9C 0D9F
              0DA0 0DA2 0DE4 0DEA 0DF0 0DFE 0E0A 0E0C 0EFD 0EFF 0F01 0F16 0F18
              0F1A 0F21 0F27 0F2B 0F33 1032 1036 103A 1D42 1043 1043 1045 1046
              1046 10DA 10DE 10E2 10E8 10EA
END     FFF7  0A49
ENDSW   0D3E  0858 0862 0CF0 0D1D 0D26
EPA     091A
ERP     0006  1256 1275 128D 1326 1328
ERR     0D71  00A8 0D79 0D7F 0D8E 0D96
ERROR   FFF9
ERRXT   0D96
ERR01   0D86  0D7C 0D87
ERR02   0D89  0D84
ERR03   0D8F  0D8C
ETADR   FFE5  0012 0B37
ETPTR   FFE6  0B34 084E 0C0A 0C0E 0C10 0CF3 0D27
ETSST   FFE9  09FA 0A65
ETSSV   FFE8  09FC 0A0D
EXIT    0AA2  0A1A 0AA5 1233
EXITA   0AA7  0AAA
EXIT1   0079  0096
EXTAD   1233  0B27 0B33 DB51 0B53 0B56 0F23 0F26 0F2A 0F2A 0F34 1030 1035 1039
              1039 104A 104F 1053 105A 1058 1061 1064 1069 106E 1074 107D 1083
              10D8 10DD 10E1 10E1 1105 1108 110D 1118 111D
EXTYP   0001
HDG43   00C5  0059
HDG53   00AE  003C
HDSW    0E9E  0E60 0E69 0E98
HEX     114A  0FFA 1062 1106 1169 116D
HEXXT   1169
HEX01   114E  11B2 11C0
```

```
HEX02   1154  1152
HEX03   1166  1161
HEX04   1167  1153 1156
HEX05   1168  1168
HEX06   1170  11A3
HEX07   117B  1177
HEX08   1182  117C
HEX09   118D  1183
HEX10   1193  118D 1196
HEX11   1197  1188
HEX12   119E  1198
HEX13   11AC  11A8
HEX14   11B3  11AE
HEX15   11BE  11AB
HEX2A   115F  115A
HOLD    102C  101A 101F
INOUT   FF70  0DA5 0F3C 0F3F 0F56 0F65 0F7C 0F88 0FBB 0FD0 0FE9 1000 1009 1055
              1066 10A1 10EF 10FB 10FF 110A 1123 1154 116B 1175 11A9 11C9 1216
IOAP    0008  126A 128B 12BB 12BC 12C9
IPA     0918
KEC00   120C  11E1
KED00   10D4  103F 1090 1081
KED02   10D5  10C4
KFFFF   10D6  1075 10C1
K00FF   0A3A  09BA 09F3 0A06 0A2E 0E3D
K000C   10D2  1084
K000F   0996  004B 004A
K0002   10D0  1060 1094
K0100   1003  104B 108C 10BC 11F3
K0200   0B14  0ABA 0AF4
K0400   0F1D  0F00 0F19
K0800   0D3D  0D16 0D2C 0D39
K1      0994  001F 0C1D 0DB9 0E51
K1000   0E14  0DA1 0E0B
K13     0C47  0BE2
K2      0995  0BA3 0C20 0ED5 11D8
K2000   0D9A  0D76 0D8F 10F9
K23     0C46  0BD9
K3      1140  0075 1104 110E
K4000   0D0F  0CE5 0007
K4010   11C6  115F
K4420   1017  100B
K7      120D  11DD
K7FFF   0D10  0CFC
K8000   0C45  0B2C 0C19 0C3B 0F12 0FF2
K8100   1016  1002 1057
K9      0C48
LCID1   0A3C  09A1
LCID2   0A3D  09A9
LCID4   0A3E  09CF
LCLID   FFD9  0040 09A3 09AB 09D0 0F27 0F33 1036 1042 100E 10EB
LCMSG   00DC  0060
LDEXT   0E55
LDMSG   0A9B  0A96
LDM1    0A9E  0A8D
LDM2    0AA0  0A90
LDM3    0AA1  0A93
LDPRT   0A8A  09B1 0A99
LDPR1   0A94  0A97
LDPXT   0A99
LD1     0E47  0E42
LD2     0E50  0E4C
LG      0D9B  00A7 0D85 0DAC 0E04 0E12
LGDEC   0E5A  0DE3 0E9C
LGDXT   0E9C
LGD1    0E5D  0E9B
LGD2    0E68  0E5D
LGD3    0E6C  0E67
```



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LGD4    0E75  0E6F
LGD5    0E7A  0E90
LGD6    0E7E  0E88
LGD7    0EB9  0EB0
LGD8    0E92  0E79
LGEND   0E06  0DA3 0DA4
LGEXT   0E12
LGHEX   0E22  0DC2 0DC7 0DCB 0DCC 0DE1 0E36
LGHXT   0E36
LGHX1   0E2A  0E32
LGHX2   0E2B  0E2A
LGO0    0DA5  0EED
LGO1    0DB3  0DAF 00C4 0DCB 0DCD
LGO2    0DC9  00C3
LGO3    0DD3  0DBD 0DD8
LGO4    0DDA  0DD2
LGO5    0DDD  00E2
LGO6    0DE1  0DDF
LGO7    0DE3  0DDC
LGO7A   0DE4  00E0
LGO8    0DED  0EDA
LGO8A   0DF5  0DF1
LGO9    0DF7  0ECD
LG10    0DFD  0E00
LINKB   0000  1248
LIST    009B  006C 0070 0073
LISTP   0E19  0DF7 0DFC 0DFF 0EB7 0ED2
LIST1   120E  11CD 11CE 11D1 11D3 11D7 11E8 11F5 11FF 1204
LOAD    0E39  0DD1 0DD6 0E2D 0E35 0E55 0E76 0E8C 0E97
LOG     FFFB  005E 0A7C 0A94 0AA2 112F 1222
LOGAD   FFDC  0ACC 0ADD 0AEA 0DB1
LOGWC   0E15  0DBB 0DDD 0E5B 0E64 0E99
LPA     0919
L1      0BC3  0B98 0B9B
L3      0C06  0BAC
MCTRL   09A1  0095 0A24
MEND    0D11  00A6
MENOA   0D30  0D1C
MEXT1   0D2E
MEXT2   0D3B
MLSCF   091B  0A28 0A57 0A5D
MONXT   0AAE
MPDM1   0F1E  09A7 0F1B
MPOM2   102D  0044 09AF 10CB
MPDM4   10D7  09D4 113A
MPXDM   0000  00E0 00E2
MPXOP   FFFE  002C 0034 0068 006E 0AAC 0DF8 0DFE
MSGA1   0AB5  0A7E
MSGA3   1145  1131
MSGC2   0AB0  0AA4
MSGWC   FF69  000B 0DAA 0DEB 0E21 0E4E
MSG1A   0A8B  0A77
MSG1B   0A89  0A7B
MSG3A   1148  112E
MSG3B   1149  1127
MSKON   FFEF
MTERM   0A40  09DA 0A17 0A23 0A4B 0D2E 122E
MXTIM   008F
M12SW   0E57  0DAB 0E40 0E49 0E50 0E53
NEG     FFD1
NEG3    0099  0027
NLINT   FFEB  0ABF 0ADA 0C27 0D65
NTTIM   FFEA  0A4F 0B0D 0B17 0D64
NXTPG   0A39  0A1E 0A21 0A22 0A33
OFFLN   0EF0  0EBA 0EC9 0E07
OFVEC   0FD3  0F96
OLPRM   0EF1  0ED8
ONE     0B15  0AC5
```

```
ONOFF   FFD7  0BFE
DNVEC   0FD5  0F98
DUTDV   FFDD  0058 0DE7 0DF0 0E3A 0EC2 0ECF 0EDE
PATCH   101B  0FF6 0FFD 115B 11A6
PAUSE   0A3B  09F7 0A00 0A02 0A12
PDATA   00AD  00A3
PGSIZ   1344
PHDNG   FF6A  007E 0EE4
PIDCK   10CE  1050 106A 106D 10B4 10BB
PDLL    0B12  0AC4 0AC6 0ACB 0AD4 0AFA 0E0D
PTRCD   0EF7  0EC4
RAD     0913
RDFCN   120B  11E7 11FE
RDIND   1209  11FA 11FD 1202
RD100   11CE  11CF
RD101   11E7  11FB
RD102   11EE  11D2 11E0 11E2
RD103   11F2  11DB
RD104   11F7  11D6 11DE
RD105   1201  11E6 11FC
RD106   1206  11EB
READ1   11C7  0F37 1051 10EC 11DC 11F6 1200 1205 1206
RELDV   FFFB
RELFC   0FCE  0023 0A91 0F7A 0FA4 0FAD 11AF 11B7
REQDV   FFFA
RESTR   0D3F  099D 0B1A 0CE7 0D6F
RESXT   0D6F
RES0    0D54  0D4C
RES1    0D61  0D5E
RES2    0D69  0D40 0D41 0D42
RES3    0D58  0D57
RID     0912
RLDV    0CDD  00AA 0B5D 0CE8
RLDVC   0CFC  0CEF 0CF2
RLDVD   0CFF  0D04
RLEXT   0D09  0CDE
RLIND   11C3  114F 1166 11B3
RQDV    0820  00A9 082F
RQDVA   0839  0B4D
RQDVB   0B42  0B3C
RQDVC   0B4C  0B46
RQDVD   0B4E  0B36 0B4B
RQDVE   0B5F  0B5A
RQDVF   0B6B  0B5B
RQDVG   0B70  0B6A
RQDVH   0B85  0B7B 0B93
RQDVI   0B8E  0B89
RQDVJ   0B94  0B91
RQDVK   0BD0  0BCB
RQDVL   0BDE  0BDB
RQDVM   0BE2  0BDC
RQDVN   0BE8  0BDD 0BE4
RQDVP   0BFD  0BF0
RQDVQ   0C0A  0BB1 0BC2 0C01 0C04
RQDVT   0C10  0C0C
RQDVW   0C32  0C25 0C39
RQDVY   0C3A  0C36
RQEXT   0C3D  0B21 0B23
RTNTO   0C61  0C62
SCESW   0D98  0D7E 0D81 0D89 0D8D
SEQCK   10CD  102E 1034 103F 1040 1040 1044 104B 1050 1079 107C 10AD 1080 10C3
SETCD   007B  003E 005D 008C
SETC1   007D  00B2
SETC2   0086  00BB
SETUP   0BB2  0B9F
SETXT   008C
SPC53   0E1B  0DE6
START   FFF6  0A2A 0A5F
```



```
STATS   FFF0  0AB9 0ABB 0AF3 0AF5 0B2B 0B2E 0C3A 0C3C 0CE4 0CE6 0D06 0D08 0D15
              0D17 0D2B 0D2D 0D38 0D3A 0D77 0D78 0D90 0D92 0DA0 0DA2 0E0A 0E0C
              0EFF 0F01 0F1B 0F1A
STRT    0AB3  00A5
STRTA   0AC2  0ACE 0AD9 0AE3 0B03 0B11
STRTB   0AD1  0ACB
STRTC   0AE0  0AD6 0ADC 0AE9
STRTD   0AEA  0ADF
STRTE   0AED  0AE6
STRTF   0B01  0AC1
STRTG   0AF6  0AB3 0AB4
STRTH   0B0C  0B06
STRXT   0AFF  0AED 0AFC
SWS     0A2C  09B3 0A10 0A34
SWSXT   0A34
SW0     0914
SW1     0915
SW2     0916
SW3     0917
SYSR1   0002  123F
SYSR2   0003  1243 12CD
SYSR3   0004  1241
SYSR4   0005  127F 1332 1335
TBEND   0CDC
TBPTR   0C49  0B49 0C0D
TEMP    0E58  0E3F 0E45 0E54
TERM    091C  0AE1 0B3A 0B60 0BB6 0C34 0D02 0F0E 0FBA
TIMCT   FFDE  002B 0B0C
TIMON   FFED  0B01 0B10 0D67
TIMXT   0B1E  0B19
TMOUT   0B16  0B13 0B1E
TOIND   FFE1  0B1C 0CE3
TDRTN   0B13  0B0E
TRMXT   0A4B  0A44
TSCTL   0A61  09C2 09FF 0A0F 0A19 0A71 122C
TSCXT   0A70  0A6A 0A6B
TVECT   00A4  0036
TYPCD   0EF2  0EE0
TYPE    0FDC  0F39 0FFE 1012 1014
TYPEX   0FFE
TYPEY   1014
TYPE1   0FE9  0FE4
TYPE2   0FF2  0FDF
TYPE3   1000  0FF5
TYPE4   1009  1003
TYPE5   1012  0FED 100C
VCTCK   0FD1  0F32 0F9A 0FAF
VERSN   008E  0003 0005 0005 0010 0013 0016 0018 001A 001C 0022 0025
WDCNT   FF6F  0DEA
WORK    11C1  119E 119F 1189 11BC
WORK1   11C2  1171 11A0
WRDCT   0FD0  0F76 0F84
XEQSW   FFDB  09DC 09E2 0A41 0A47 0AD7 0D1A
ZONE    11C5  1173 117A 1185
END OF ASSEMBLY
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1. PURPOSE

A DIAGNOSTIC MONITOR DESIGNED TO OPERATE THE 1800 OFF LINE DIAGNOSTIC FUNCTION TESTS IN THE ON LINE ENVIRONMENT OF THE 1800 MULTIPROGRAMMING EXECUTIVE (MPX) SYSTEM. MPXDM IS PROVIDED AS A MEANS TO INCREASED SYSTEM AVAILABILITY.

2. REQUIREMENTS

2.1 PROGRAM REQUIREMENTS

A. THE 1800 MPX SYSTEM, WITH THE TIME SHARE FEATURE, MUST BE CURRENTLY OPERATING.
B. A MINIMUM OF 5K OF VARIABLE CORE MUST BE AVAILABLE IN THE MPX SYSTEM IN ORDER TO OPERATE THE ON LINE DIAGNOSTICS.
C. THE CURRENTLY OPERATING VERSION OF MPX MUST BE COMPATABLE WITH THE VERSION OF MPXDM BEING USED.
D. THE PROPER MPX CONTROL CARDS MUST BE USED TO LOAD AND EXECUTE MPXDM. SEE OPERATING PROCEDURE SECTION 3.0 AND THE PICTORIAL REPRESENTATION OF THE MPXDM DECK MAKE UP, APPENDIX SECTION 6.2.
E. THE PROPER EDIT CARDS MUST FOLLOW THE MPXDM OBJECT DECK AND MPX CONTROL CARDS. EDITING IS DESCRIBED IN THE APPENDIX OF THE PROGRAM DESCRIPTION FOR THE OFF LINE DIAGNOSTIC MONITOR PID 0801.
F. THE DEVICE TO BE TESTED MUST BE DEFINED IN THE MPX SYSTEM AND MUST BE LOGICALLY OFF LINE IF SO REQUIRED BY THE DFT.

2.2 HARDWARE REQUIREMENTS

A. THE HARDWARE WHICH SATISFIES THE REQUIREMENTS OF THE MPX SYSTEM ALSO SATISFIES THE REQUIREMENTS OF MPXDM.

3. OPERATING PROCEDURE

3.1 LOADING PREPARATION

1. READ THE GENERAL DESCRIPTION FOR ON LINE DFT OPERATION, APPENDIX SECTION 6.5.1.

2. READ THE DESCRIPTION FOR THE PARTICULAR DFT TO BE RUN ON LINE, APPENDIX SECTION 6.5.X.

3. PUNCH THE MPX CONTROL CARDS.

IN ORDER TO LOAD MPXDM, THE PROPER MPX CONTROL CARDS MUST BE INCLUDED AS PART OF THE ON LINE DIAGNOSTIC DECK. THE NORMAL PROCEDURE FOR LOADING IS TO INPUT THE MPXDM OBJECT DECK VIA THE 1442 CARD READER AND STORE IT ON THE TEMPORARY AREA OF DISK. THE EXECUTE CONTROL CARD THEN CAUSES MPXDM TO BE CALLED FROM TEMPORARY DISK TO CORE.

IT IS ALSO POSSIBLE TO STORE MPXDM IN THE CORE IMAGE AREA OF THE CUSTOMERS DISK PACK AS A PERMANENT DISK RESIDENT PROGRAM. SINCE THE CUSTOMERS DISK PACK IS INVOLVED, MPXDM MUST NOT BE STORED ON IT UNLESS CUSTOMER PERMISSION IS FIRST OBTAINED.

A. TO PERFORM THE NORMAL LOAD FUNCTION VIA THE 1442, PUNCH THE MPX CONTROL CARDS AND ARRANGE THEM INTO A DECK AS DESCRIBED IN THE APPENDIX SECTION 6.2.1, CONTROL CARD FORMAT - NORMAL LOAD VIA 1442.

B. IF CUSTOMER PERMISSION HAS BEEN OBTAINED TO STORE MPXDM IN THE CORE IMAGE AREA OF THE USER PACK, PUNCH THE CONTROL CARDS AND ARRANGE THEM INTO A DECK AS DESCRIBED IN THE APPENDIX SECTION 6.2.2, CONTROL CARD FORMAT - PERMANENT STORE ON DISK.

4. OBTAIN THE EDIT CARDS FROM THE OFF LINE DIAGNOSTIC MONITOR (PID D801) AND PLACE THEM BEHIND THE DECK OBTAINED IN STEP 3 ABOVE.

NOTE

ALTHOUGH MPXDM HAS A PIO OF 0803 IT WILL ONLY ACCEPT THE OFF LINE MONITOR EDIT CARDS PUNCHED WITH THE OFF LINE MONITOR PID (IE E0100). DO NOT REPUNCH THE OFF LINE MONITOR EDIT CARDS TO REFLECT THE ON LINE MONITOR PID.

5. OBTAIN THE DIAGNOSTIC FUNCTION TEST (DFT) OBJECT DECK AND ITS EDIT CARDS FOR THE DEVICE TO BE TESTED AND PLACE THEM BEHIND THE DECK OBTAINED IN STEP 4 ABOVE.

6. WHILE OPERATING ON LINE, SELECTION OF DFT PROGRAM OPTIONS MUST BE ACCOMPLISHED THROUGH THE USE OF DFT CONTROL CARDS. REFER TO THE DFT PROGRAM DESCRIPTION FOR AVAILABLE OPTIONS. IF ANY OPTIONS ARE DESIRED, PUNCH THE NECESSARY CONTROL CARDS ACCORDING, TO THE APPENDIX SECTION 6.4 AND PLACE THEM BEHIND THE DECK OBTAINED IN STEP 5 ABOVE.

7. AT THIS POINT A COMPLETED ON LINE DIAGNOSTIC DECK EXISTS. VERIFY THAT THE DECK IS IN CORRECT ORDER BY COMPARING IT AGAINST

   1. IF NORMAL LOAD VIA THE 1442, THE PICTORIAL REPRESENTATION OF THE ON LINE DECK IN THE APPENDIX SECTION 6.3.1.

   2. IF CUSTOMER PERMISSION HAS BEEN OBTAINED, AND STORING ON THE USER DISK, THE PICTORIAL REPRESENTATION OF THE ON LINE DECK IN THE APPENDIX SECTION 6.3.2.

8. IF THE DFT TO BE RUN REQUIRES THE TEST DEVICE BE LOGICALLY OFF LINE (REFERENCE DFT ON LINE OPERATION SECTION 6.5.X), THEN, WITH CUSTOMER PERMISSION, TAKE THAT DEVICE OFF LINE ACCORDING TO THE C.E. CORELOAD PROCEDURE SECTION 6.1.

** NOTE **

THE ON LINE DIAGNOSTIC SYSTEM CANNOT PREVENT THE MPX SYSTEM FROM ADDRESSING ANY DATA CHANNEL. IF THE DEVICE TO BE TESTED IS A CHANNEL DEVICE, AND IT IS SHARING IT'S CHANNEL WITH ANOTHER DEVICE, THEN IT MUST BE RECOGNIZED THAT THE POSSIBILITY OF CHANNEL CONTENTION EXISTS. THIS CHANNEL CONTENTION IS DEPENDENT UPON THE MANNER IN WHICH THE OTHER DEVICE IS USED. THE C.E. SHOULD DISCUSS THIS POSSIBILITY WITH THE CUSTOMER AND EITHER, TAKE THE SHARED DEVICE OFF LINE IN ADDITION TO THE TEST DEVICE, OR NOT RUN THE DFT IN QUESTION.

9. PERFORM ANY REQUIRED DEVICE 'SETUP' AS MAY BE DEFINED IN THE DFT PROGRAM DESCRIPTION.

10. LOADING PREPARATIONS ARE NOW COMPLETED. REFER TO SECTION 3.2 OPERATING PROCEDURE, FOR THE STEPS NECESSARY TO LOAD AND OPERATE THE ON LINE DIAGNOSTIC MONITOR.

3.2 PROGRAM OPERATION

1. PROGRAM LOADING

   A. COMPLETE THE LOADING PREPARATION AS DEFINED IN SECTION 3.1.

   B. TO LOAD AND GO WITHOUT OPTIONS.

      1. SET ALL C.E. SWITCHES TO THEIR OFF POSITION.

NOTE

WHEN THIS MODE OF OPERATION IS PERFORMED, THE DIAGNOSTIC MONITOR ASSUMES THE FOLLOWING CONDITONS-

A. NO CONTROL CARDS ARE TO BE READ.
B. THE DEVICE TO BE TESTED IS THE ONE DEFIINED BY THE 1ST DDEF ENTRY IN THE DFT EDIT CARD.
C. THE DEVICE TO BE TESTED IS CURRENTLY OFF LINE. IN THE CASE OF THE AIDPC PROGRAM (PID D823), AI NEED NOT BE OFF LINE. REFER TO APPENDIX SECTION 6.5.5 FOR MORE INFORMATION.

      2. PROCEED TO STEP E.

   C. TO LOAD AND GO WITH OPTIONS

      1. SET THE C.E. SWITCHES FOR THE DESIRED OPTIONS ACCORDING TO TABLE 1.

      2. IF CONTROL CARDS ARE TO BE READ, C.E. SWITCH 8 MUST BE ON AND THE DESIRED CONTROL CARDS MUST BE PLACED BEHIND THE DFT EDIT CARDS PRIOR TO LOADING.

      3. TO ACCOMPLISH THE LOAD AND GO, C.E. SWITCHES 11, 14 AND 15 MUST BE OFF AT LOAD TIME.

      4. PROCEED TO STEP E.

   D. TO LOAD AND PAUSE

      1. THIS LOADING MODE SHOULD BE USED IF THE DEVICE TO BE TESTED IS ON LINE AT LOAD TIME, IF DEVICE SETUP IS TO BE PERFORMED PRIOR TO DFT EXECUTION,OR FOR ANY REASON IT IS DESIRED TO LOAD THE DFT BUT NOT IMMEDIATELY EXECUTE IT.

      2. SET C.E. SWITCH 11 TO IT'S ON POSITION. THIS PREVENTS DFT EXECUTION AFTER LOADING.

      3. IF CONTROL CARDS ARE TO BE READ, SET C.E. SWITCH 8 ON.

         IT SHOULD BE NOTED THAT WHEN THIS MODE OF LOADING IS USED CONTROL CARDS CAN BE READ AFTER THE DFT IS LOADED SINCE DFT EXECUTION IS DEPENDENT ON C.E. SWITCH 11 BEING TURNED OFF.

      4. SELECT ANY OTHER OPTIONS ACCORDING TO TABLE 1.

E. IF TIME SHARING IS NOT PRESENTLY IN PROGRESS,PROCEED TO STEP F,OTHERWISE PROCEED AS FOLLOWS.

IF TIME SHARING IS PRESENTLY IN PROGRESS, AND THE CUSTOMER HAS BATCH JOBS STACKED IN THE 1442 HOPPER, THEN AFTER OBTAINING CUSTOMER PERMISSION, PLACE THE DIAGNOSTIC DECK OBTAINED IN SECTION 3.1 BEHIND THE LAST CUSTOMER JOB. INSURE THAT THE DIAGNOSTIC DECK PRECEEDS THE // JOB & // END CARDS WHICH ARE USED TO END TIME SHARING OPERATION.

NO FURTHER ACTION IS REQUIRED TO EFFECT THE DIAGNOSTIC SYSTEM LOADING. WHEN ALL JOBS PRECEEDING THE DIAGNOSTIC DECK HAVE BEEN COMPLETED, MPX WILL BEGIN LOADING THE DIAGNOSTIC MONITOR (MPXDM).

IF TIME SHARING IS PRESENTLY IN PROGRESS,BUT NO CUSTOMER BATCH JOBS ARE WAITING,PLACE THE DIAGNUSTIC DECK OBTAINED IN SECTION 3.1 IN THE 1442 HOPPER AND MAKE THE 1442 READY.

PROCEED TO STEP H.

F. IF TIME SHARING IS NOT PRESENTLY IN PROGRESS, PLACE THE DIAGNOSTIC DECK IN THE 1442 HOPPER AND MAKE THE 1442 READY.

G. OBTAIN CUSTOMER PERMISSION TO ENVOKE TIME SHARING. TIME SHARING IS STARTED BY SETTING SENSE/PROGRAM SWITCH 7 ON AND DEPRESSING THE CONSOLE INTERRUPT BUTTON.

H. CUSTOMER BATCH JOBS MAY BE STACKED BEHIND THE ON LINE DIAGNUSTIC DECK, HOWEVER IF MORE THAN 1 DFT IS TO BE RUN DURING ON LINE DIAGNOSTIC OPERATION, OR IF PERIODIC READING OF CONTROL CARDS IS ANTICIPATED, THEN THE STACKING OF JOBS SHOULD BE DELAYED UNTIL JUST BEFORE TERMINATION OF THE DIAGNOSTIC OPERATION.

I. THE MPX DATA PROCESSING MONITOR WILL INPUT MPXDM FROM CARDS AND STORE IT ON TEMPORARY DISK AREA. THIS ACTION IS INTIATED BY THE 3 CONTROL CARDS PRECEEDING THE MPXDM OBJECT DECK.

J. IF ANY ERRORS ARE DETECTED DURING THE READING OF THE MPXDM OBJECT DECK, MPX WILL INFORM THE OPERATOR VIA A MESSAGE. REFER TO THE MPX USERS GUIDE FOR RECOVERY PROCEDURES.

K. THE 2 CONTROL CARDS WHICH FOLLOW THE MPXDM OBJECT DECK WILL INFORM THE MPX DATA PROCESSING MUNITOR TO LUAD MPXDM FROM DISK TO CORE AND PASS CONTRDL TO IT.

L. MPXDM UPON RECEIVING CONTROL WILL INPUT ITS EDIT CARDS. SUCCESSFUL LOADING AND EDITING OF MPXOM WILL BE INDICATED BY MESSAGE D002.

M. THE DFT AND IT'S EDIT CARDS WILL THEN BE READ. SUCCESSFUL LOADING AND EDITING OF THE DFT WILL BE INDICATED BY MESSAGE D001.

N. IF C.E. SWITCH 8 IS ON CONTROL CARDS WILL BE READ. MESSAGE A003 WILL BE PRINTED FOR EACH VALID CONTRUL CARD READ.

O. IF C.E. SWITCH 11 IS OFF (LOAD AND GO) DFT EXECUTION WILL BEGIN. THIS IS INDICATED BY MESSAGE A001.

P. IF C.E. SWITCH 11 IS ON (LOAD AND PAUSE) THE DIAGNOSTIC MONITOR WILL LOOP IN IT'S CONTROL ROUTINE AWAITING C.E. ACTION.

IF THE LOAD AND PAUSE MODE WAS SELECTED IN ORDER TO TAKE THE DEVICE TO BE TESTED OFF LINE AFTER THE DFT WAS LOADED, PROCEED AS FOLLOWS-

1. SET C.E. SWITCH 15 ON - ENTER DIAGNOSTIC MONITOR PAUSE.
2. CALL THE C.E. CORE LOAD AND TAKE THE DEVICE TO BE TESTED OFF LINE ACCURDING TO THE DESCRIPTION GIVEN IN THE APPENDIX SECTION 6.1.
3. UPON COMPLETION OF THE C.E. CORELOAD, (ALL C.E. SWITCHES OFF) AUTOMATIC EXECUTION OF THE DFT WILL OCCUR - MESSAGE A001 INDICATES WHEN EXECUTION IS STARTED.
4. SET THE C.E. SWITCHES FOR DESIRED OPTIONS.

IF THE LOAD AND PAUSE MODE WAS SELECTED FOR FUNCTIONS OTHER THAN TAKING THE DEVICE OFF LINE, COMPLETE THOSE FUNCTIONS AND THEN TORN C.E. SWITCH 11 OFF TO BEGIN DFT EXECUTION.

Q. THE PROGRAM OPTIONS SPECIFIED IN TABLE 1 MAY BE PERFORMED AT ANY TIME DURING DFT EXECUTION. REFER TO THE DETAILED DESCRIPTION AND USE SECTION OF THE TABLE FOR THE OPERATION OF THESE OPTIONS.

2. CHANGING DEVICES

A. WHEN MULTIPLE DEVICES EXIST FOR THE SAME AREA CODE, AS IS THE CASE FOR 1053/1816 AND 1810, THEN EACH OF THE DEVICES MAY BE TESTED WITH OUT RELOADING THE DFT BY FOLLOWING THE PROCEDURE OUTLINED BELOW.

B. REFER TO THE DFT PROGRAM DESCRIPTION TO OBTAIN THE INFORMATION REQUIRED BY THE DFT FOR DEVICE SELECTION.

C. PUNCH THIS INFORMATION INTO A CONTROL CARD AS OUTLINED IN APPENDIX SECTION 6.4 OF THIS DOCUMENT.

D. PLACE THE CONTROL CARDS IN THE 1442 HUPPER AND MAKE THE 1442 READY.

E. TURN C.E. SWITCH 11 UN TO DE-EXECUTE THE DFT. CHANGING DEVICES WITH OUT FIRST DE-EXECUTING THE DFT WILL CAUSE THE DFT TO BE ABORTED.

F. COMPLEMENT C.E. SWITCH 8 TO READ THE DFT CONTROL CARDS.

G. IF THE NEWLY SELECTED DEVICE WAS PREVIOUSLY TAKEN OFF LINE, TORN C.E. SWITCH 11 OFF TO EXECOTE THE UFT.

H. IF THE NEWLY SELECTED DEVICE IS ON LINE, PROCEED AS FOLLOWS-

1. TURN C.E. SWITCH 15 ON TO ENTER THE DIAGNOSTIC MONITOR PAUSE.
2. CALL THE C.E. CORE LOAD AND TAKE THE DEVICE OFF LINE AS DESCRIBED IN THE APPENDIX SECTION 6.1.
3. WHEN THE C.E. CORELOAD IS TERMINATED, AND CONTROL IS RETURNED TO THE DIAGNUSTIC MONITOR THE DFT WILL BE AUTOMATICALLY EXECOTED.
4. SET THE C.E. SWITCHES TO DESIRED OPTIONS.

3. LOAD NEW DFT

A. THIS PROCEDURE SHOULD BE USED TO RELOAD THE DFT PRESENTLY IN CORE (REQUIREMENT IF THE DFT WAS ABORTED) OR TO LOAD A NEW DFT FOR THE PURPOSE OF TESTING A DIFFERENT DEVICE.

B. PLACE THE DFT OBJECT DECK, ITS EDIT CARDS AND ANY DESIRED CONTROL CARDS IN THE 1442 HOPPER AND MAKE THE 1442 READY.

C. IF A DFT IS PRESENTLY OPERATING, OR IF THE DEVICE TO BE TESTED BY THE NEW DFT IS CURRENTLY ON LINE, TURN C.E. SWITCH 11 ON. THE EXECUTING DFT WILL BE DE-EXECUTED AND THE LOAD AND PAUSE MODE WILL BE SPECIFIED.

D. COMPLEMENT C.E. SWITCH 9. THE DFT OBJECT DECK WILL BEGIN LOADING.

E. IF CONTROL CARDS ARE TO BE READ, SET C.E. SWITCH 8 ON, OTHERWISE TURN IT OFF.

NOTE

C.E. SWITCH 9 MUST BE COMPLEMENTED PRIOR TO SETTING C.E. SWITCH 8, OTHERWISE CHANGING C.E. SWITCH 8 IS INTERPRETED AS A REQUEST TO READ CONTROL CARDS PRIOR TO LOADING.

F. UPON COMPLETION OF THE DFT AND EDIT CARD LOAD, CONTROL CARDS WILL BE READ IF C.E. SWITCH 8 IS ON.

G. IF C.E. SWITCH 11 IS OFF UPON COMPLETION OF THE LOAD, THE DFT WILL BE AUTOMATICALLY EXECUTED.

H. IF C.E. SWITCH 11 IS ON, AND THE DEVICE TO BE TESTED WAS PREVIOUSLY TAKEN OFF LINE, THEN DFT EXECUTION CAN BE STARTED BY TURNING C.E. SWITCH 11 OFF.

I. IF THE DEVICE TO BE TESTED IS ON LINE, PROCEED AS FOLLOWS-

1. TURN C.E. SWITCH 15 ON TO ENTER THE DIAGNOSTIC MONITOR PAUSE.

2. CALL THE C.E. CORE LOAD AND TAKE THE DEVICE OFF LINE AS DESCRIBED IN THE APPENDIX SECTION 6.1.

3. WHEN THE C.E. CORELOAD IS TERMINATED, AND CONTROL IS RETURNED TO THE DIAGNOSTIC MONITOR, THE DFT WILL BE AUTOMATICALLY EXECUTED.

4. SET THE C.E. SWITCHES FOR DESIRED OPTIONS.

4. READING CONTROL CARDS

A. CONTROL CARDS MAY BE READ AT ANY TIME DURING DFT OPERATION, IN ORDER TO COMMUNICATE WITH IT.

B. REFER TO THE DFT PROGRAM DESCRIPTION FOR AVAILABLE OPTIONS.

C. PUNCH THE DESIRED OPTIONS INTO CONTROL CARDS AS DESCRIBED IN THE APPENDIX SECTION 6.4 OF THIS DOCUMENT.

D. PLACE THE CONTROL CARDS IN THE 1442 HOPPER AND MAKE IT READY.

E. COMPLEMENT C.E. SWITCH 8 TO READ THE CONTROL CARDS.

F. ANY NUMBER OF CONTROL CARDS MAY BE READ, HOWEVER IF MORE THAN 1 CARD CONTAINS THE SAME FUNCTION NUMBER, THEN ONLY THE DATA FROM THE LAST CARD READ WITH THAT FUNCTION NUMBER WILL APPEAR IN THE DFT.

3.3 ERROR RECOVERY

IN ORDER TO AVOID THE POSSIBILITY OF AFFECTING SYSTEM INTEGRITY, ALL ERRORS DETECTED, OTHER THAN THOSE DIRECTLY ASSOCIATED WITH THE DEVICE UNDER TEST, WILL RESULT EITHER IN A DFT ABORT, CONTROL CARD ABORT OR A COMPLETE DIAGNOSTIC SYSTEM ABORT. ERROR RECOVERY THEREFORE WILL BE TO PERFORM A RELOAD.

THE RELOAD PROCEDURE TO BE USED IS GIVEN IN THE EXPLANATION OF THE ERROR MESSAGE WHICH DEFINES THE CAUSE OF THE ABORT.

3.4 PROGRAM TERMINATION

TO PERFORM A NORMAL TERMINATION OF ON LINE DIAGNOSTIC OPERATION, PROCEED AS FOLLOWS-

1. TURN C.E. SWITCH 14 ON. MESSAGE C002 WILL BE PRINTED ON THE OUTPUT DEVICE.

2. IF CUSTOMER JOBS ARE TO BE RUN FOLLOWING THE TERMINATION OF ON LINE DIAGNOSTICS, HAVE THE CUSTOMER STACK HIS JOBS IN THE 1442 HOPPER AND MAKE THE 1442 READY.

3. IF NO CUSTOMER JOBS ARE TO BE RUN, AND TIME SHARING IS TO BE ENDED, PLACE A // JOB FOLLOWED BY A // END CARD IN THE 1442 HOPPER AND MAKE THE 1442 READY.

4. TURN ALL C.E. SWITCHES OFF. MPXDM WILL CALL ON THE MPX EXIT ROUTINE AND ON LINE DIAGNOSTICS WILL BE TERMINATED.

5. RESTORE THE DEVICES TESTED TO THE ON LINE STATUS VIA THE C.E. CORELOAD.

ON LINE DIAGNOSTICS CAN ALSO BE TERMINATED AT ANY TIME BY SETTING SENSE/PROGRAM SWITCH 7 AND DEPRESSING CONSOLE INTERRUPT. BEFORE DOING SO, HOWEVER, THE JOB CONTROL CARDS FOR THE NEXT FUNCTION SHOULD BE READIED IN THE 1442.

TABLE 1 MPXDM OPTIONS

C.E. SWITCHES 8 9 10 11 12 13 14 15	DESCRIPTION
. . . . . 1 . .	ENTER DIAGNOSTIC MONITOR PAUSE
. . . . . 1 . . .	TERMINATE ON LINE DIAGNOSTIC OPERATIONS
. . . . . 1	BYPASS DFT ERROR PRINTOUTS
. . . . 1	LOOP ON DFT ERROR
. . . 1	DE-EXECOTE DFT
. . 1	LOCK IN TIME SHARE MODE (SEE DETAILED DESCRIPTION)
. C (SEE NOTE 1).	LOAD NEW DFT FROM CARD READER
1 (SEE NOTE 2).	READ DFT CONTROL CARDS FROM CARD READER

NOTE 1- C = COMPLEMENT OR CHANGE STATE. THIS SWITCH HAS NO EFFECT UNTIL AFTER THE 1ST DFT HAS BEEN LOADED.

NOTE 2- IF THIS SWITCH IS ON AT DFT LOAD TIME, CONTROL CARDS WILL BE READ IMMEDIATELY AFTER THE DFT IS LOADED. TO READ CONTROL CARDS AT OTHER THAN LOAD TIME, COMPLEMENT THE SWITCH.

** DETAILED DESCRIPTION AND USE **

C.E. SWITCH 8 — READ DFT CONTROL CARDS

CONTROL CARDS ARE USED TO COMMUNICATE TO THE DFT THAT INFORMATION WHICH IS ENTERED VIA THE SENSE/PROGRAM AND DATA ENTRY SWITCHES DURING OFF LINE OPERATION. THIS INFORMATION INCLUDES ROUTINE SELECTION, DEVICE SELECTION, OPERATING OPTIONS AND PARAMETER DATA. THE OPTIONS AVAILABLE FOR ANY DFT CAN BE FOUND IN THAT DFT'S PROGRAM DESCRIPTION UNDER SECTION 3. IN THE CASE OF SPECIAL ENTRIES FOR ON LINE OPERATIONS, REFER TO THE APPENDIX SECTION 6.5.X OF THIS DOCUMENT UNDER THE APPROPRIATE PID.

IF SWITCH 8 IS ON AT DFT LOAD TIME, THEN CONTROL CARDS WILL BE READ IMMEDIATELY FOLLOWING THE DFT LOAD FUNCTION. ONCE A DFT IS LOADED, CONTROL CARDS MAY BE READ BY COMPLEMENTING THE SWITCH (ON TO OFF OR OFF TO ON).

EACH TIME THIS OPTIONS IS ACTIVATED, ALL CONTROL CARDS WHICH PRECEED THE 'END CONTROL CARD', WILL BE READ. IF MULTIPLE CONTROL CARDS SPECIFYING THE SAME FUNCTION NUMBER ARE READ, THEN THE DATA FROM THE LAST CARD READ WITH THAT FUNCTION NUMBER WILL APPEAR IN THE DFT.

REFER TO APPENDIX SECTION 6.4 FOR CONTROL CARD FORMAT.

C.E. SWITCH 9 — LOAD DFT OBJECT DECK

THIS OPTION IS USED TO RELOAD THE DFT FOLLOWING A DFT ERROR ABORT, OR TO LOAD A NEW DFT TO TEST A DIFFERENT DEVICE.

THIS SWITCH BECOMES EFFECTIVE AFTER MPXDM AND THE 1ST DFT HAVE BEEN LOADED INTO CORE. THE OPTION IS ACTIVATED BY CHANGING THE POSITION OF THE SWITCH, IE- ON TO OFF OR OFF TO ON. EACH COMPLIMENT OF THE SWITCH RESULTS IN THE READING OF 1 DFT OBJECT DECK.

IF A DFT IS EXECUTING WHEN SWITCH 9 IS COMPLEMENTED, THEN THAT DFT WILL BE DE-EXECUTED PRIOR TO LOADING THE NEW DFT.

SINCE COMPLEMENTING SWITCH 9 ESTABLISHES A LOAD FUNCTION, THE POSITION OF SWITCH 8 MUST ALSO BE CONSIDERED. AFTER COMPLEMENTING SWITCH 9, SET SWITCH 8 TO ON IF CONTROL CARDS ARE TO BE READ, OR TO OFF IF NO CONTROL CARDS ARE DESIRED.

SWITCH 9 MAY BE EITHER ON OR OFF AT MPXDM LOAD TIME.

C.E. SWITCH 10 — LOCK IN MPX TIME SHARE MODE

OBTAIN COSTOMER PERMISSION BEFORE USING THIS OPTION.

SETTING SWITCH 10 ON CAUSES THE DIAGNOSTIC SYSTEM TO BE LOCKED IN THE TIME SHARING MODE OF MPX.

LOCKED IN TIME SHARING MODE IS DEFINED AS FOLLOWS- ANY INTERRUPT WHICH WOULD NORMALLY CALL A CORE LOAD INTO THE AREA OCCUPIED BY THE DIAGNOSTIC SYSTEM, WILL BE ENTERED IN THE QUEUE AND NOT EXECUTED UNTIL EITHER C.E. SWITCH 10 IS TURNED OFF, OR THE QUEUE BECOMES FULL. WHEN THE QUEUE BECOMES FULL, TIME SHARING WILL BE UNLOCKED AND THE CORE LOADS WAITING FOR SERVICE WILL BE EXECUTED. WHEN THE QUEUE IS EMPTIED, TIME SHARING WILL AGAIN BE LOCKED IN.

THE EFFECT OF THIS OPTION IS TO PREVENT THE DIAGNOSTIC SYSTEM FROM BEING SWAPPED TO DISK EACH TIME AN INTERRUPT REQUIRES ITS AREA. THIS RESULTS IN INCREASED RUNNING TIME BLOCKS FOR THE DFT.

THIS SWITCH CAN BE TURNED ON OR OFF AT ANY TIME.

C.E. SWITCH 11 — EXECUTE/DE-EXECOTE DFT

THE FUNCTION OF THIS SWITCH IS TO EITHER EXECUTE OR DE-EXECUTE THE DFT PRESENTLY IN CORE.

IF THE SWITCH IS IN THE OFF (EXEOCTE) POSITION AT LOAD TIME, THE 'LOAD AND GO' MODE OF OPERATION IS PERFORMED.

IF THE SWITCH IS IN THE ON (DE-EXECUTE) POSITION AT LOAD TIME THE DFT IS LOADED BUT NOT EXECUTED. THIS CONDITION SHOULD BE USED IF THE DEVICE TO BE TESTED HAS NOT YET BEEN TAKEN OFF LINE, OF IF DFT SETUP IS TO BE PERFORMED PRIOR TO DFT EXECUTION. CONTROL CARDS MAY ALSO BE READ WHILE IN THIS STATE.

IF A CURRENTLY OPERATING DFT IS DE-EXECUTED, IT IS NOT ELIMINATED FROM FORTHER OPERATION. TORNING SWITCH 11 OFF AGAIN WILL RE-EXECOTE THE DFT.

C.E. SWITCH 12 — LOOP ON DFT ERROR

WHEN THIS SWITCH IN ON, ANY DFT CALL ON THE DIAGNOSTIC MONITOR ERROR ROUTINE WILL RESULT IN A RETURN TO THE DFT AT A SPECIFIED LOOP ON ERROR ADDRESS.

AS A SAFEGUARD TO THE OPERATING SYSTEM DIAGNOSTIC MONITOR ERRORS CANNOT BE LOOPED.

THIS SWITCH MAY BE TURNED ON OR OFF AT ANYTIME.

IBM MAINTENANCE DIAGNOSTIC PROGRAM FOR THE 1800 SYSTEM
ON-LINE DIAGNOSTIC MONITOR (MPXDM)

DATE 17JUN68 31JUL70
EC NO. 411939 431327
PROG ID 0803-*

```
*    13       * BYPASS OFT ERROR PRINTOUTS                                  *
*                                                                           *
*               WHEN THIS SWITCH IS IN THE ON POSITION, ALL DFT ERROR MESSAGES *
*               (EXXX TYPE) WILL BE BYPASSED.                               *
*                                                                           *
*               DIAGNOSTIC MONITOR ERROR MESSAGES CANNOT BE BYPASSED.       *
*                                                                           *
*               THIS SWITCH MAY BE TURNED ON OR OFF AT ANY TIME.            *
*                                                                           *
*    14       * TERMINATE ON LINE DIAGNOSTICS                               *
*                                                                           *
*               THIS SWITCH IS USED TO PERFORM A NORMAL TERMINATION OF ON LINE *
*               DIAGNOSTIC OPERATIONS.                                      *
*                                                                           *
*               COMMAND MESSAGE C002 WILL BE PRINTED UPON DETECTION OF THIS *
*               SWITCH BEING ON.  THIS MESSAGE INFORMS THE OPERATOR TO TURN ALL*
*               C.E. SWITCHES OFF.  WHEN THE SWITCHES ARE SET TO OFF, MPXDM *
*               WILL CALL THE MPX EXIT ROUTINE TO EFFECT THE TERMINATION.   *
*                                                                           *
*               PRIOR TO TERMINATING, THE FOLLOWING OPERATIONS OCCUR,       *
*                                                                           *
*               1. ALL PENDING INTERRUPTS FROM THE DEVICE UNDER TEST WILL BE *
*                  SERVICED.                                                *
*               2. THE DFT IN EXECUTION WILL BE DE-EXECUTED.                *
*               3. THE DEVICE TABLE INTERRUPT TRANSFER VECTOR WILL BE RESTORED *
*                  TO THE MPX SYSTEM.                                       *
*               4. THE AREA BUSY INDICATOR WILL BE DECREMENTED IF PREVIOUSLY *
*                  INCREMENTED BY MPXDM.                                    *
*               5. TIME SHARING WILL BE UNLOCKED IF IT HAD BEEN PREVIOUSLY  *
*                  LOCKED BY TURNING SWITCH 10 ON.                          *
*                                                                           *
*    15       * ENTER DIAGNOSTIC MONITOR PAUSE                              *
*                                                                           *
*               TURNING THIS SWITCH ON CAUSES THE DIAGNOSTIC MONITOR TO SUSPEND*
*               DFT OPERATION.                                              *
*                                                                           *
*               WHEN THE PAUSE IS ENTERED, TIME SHARING WILL BE UNLOCKED IF IT *
*               HAD BEEN PREVIOUSLY LOCKED.                                 *
*                                                                           *
*               THIS FUNCTION IS PROVIDED FOR 2 MAJOR PURPOSES-             *
*                                                                           *
*               1. IF TIME SHARING HAD BEEN LOCKED IN, AND THE CUSTOMER     *
*                  REQUIRES THE SERVICING OF ALL PROGRAMS IN THE QUEUE, ENTER *
*                  ING THE DIAGNOSTIC MONITOR PAUSE FREES VARIABLE CORE SO THAT*
*                  THOSE PROGRAMS MAY BE EXECUTED. TERMINATING THE PAUSE (TURN-*
*                  ING SWITCH 15 OFF) WILL AGAIN LOCK TIME SHARING AND RESUME *
*                  DFT OPERATION FROM THE POINT AT WHICH IT WAS SUSPENDED.  *
*                                                                           *
*               2. IF THE C.E CALLS FOR THE LOADING OF A NEW DFT WHICH IS TO *
*                  TEST A DEVICE STILL ON LINE, THEN PRIOR TO EXECUTING THAT *
*                  DFT THE DIAGNOSTIC PAUSE SHOULD BE ENTERED.  WHILE IN THE *
*                  PAUSE, THE C.E. CORELOAD MAY BE REQUESTED TO TAKE THE DEVICE*
*                  OFF LINE.  TERMINATING THE C.E. CORELOAD RESULTS IN AUTO- *
*                  MATIC DFT EXECUTION (THE C.E. CORELOAD IS TERMINATED WITH *
*                  ALL C.E. SWITCHES OFF.  WHEN CONTROL RETURNS TO MPXDM, IT *
*                  FINDS SWITCHES 11 AND 15 OFF WHICH TERMINATES THE PAUSE AND *
*                  EXECUTES THE DFT).                                       *
*                                                                           *
*               IN ORDER TO AVOID CONFLICT IN THE USE OF THE C.E. SWITCHES  *
*               BETWEEN MPXDM AND THE C.E. CORELOAD, MPXDM WILL NOT HONOR A *
*               CHANGE IN STATE OF C.E. SWITCHES B AND 9, IF THE CHANGE OCCURED*
*               WHILE THE DIAGNOSTIC MONITOR WAS IN ITS PAUSE STATE. IN ORDER *
*               TO EXIT FROM THE PAUSE, C.E. SWS B THRU 14 MUST EITHER BE IN *
*               THE SAME POSITION AS WHEN THE PAUSE WAS ENTERED OR BE ALL OFF. *
*                                                                           *
*****************************************************************************
```


4. PRINTOUTS

ALL PRINTOUTS PROVIDED BY MPXDM ARE OF THE SAME FORMAT AS THOSE PROVIDED BY THE OFF LINE DIAGNOSTIC MONITOR.

THE FORMAT IS AS FOLLOWS.

PID MID RID RAD MOD1 MOD2...MODN

PID = THE PROGRAM IDENTITY TO WHICH THE MESSAGE APPLIES.

MID = THE MESSAGE IDENTIFICATION-
MESSAGE TYPES-
AXXX = STATUS MESSAGES
CXXX = COMMAND MESSAGES
DXXX = DATA MESSAGES
EXXX = ERROR MESSAGES

RID = THE ROUTINE IDENTIFICATION. THE NUMBER OF THE ROUTINE WHICH IS CURRENTLY IN OPERATION.

RAD = THE ROUTINE ADDRESS. THE ACTUAL CORE ADDRESS OF THE ROUTINE WHICH IS CURRENTLY IN OPERATION.

MOD = MESSAGE MODIFIERS. THE MODIFIERS ARE USED TO PRESENT INFORMATION PERTINANT TO THE MID. THE NUMBER OF MODIFIERS, AND THE DATA CONTENT IS VARIABLE WITH EACH MESSAGE.

EVERY MESSAGE PRINTED BY THE ON LINE MONITOR WILL BE PRECEDED BY THE HEADING 'COST ENG'. THE HEADING IS INCLUDED TO MAKE THE DIAGNOSTIC SYSTEM MESSAGES EASILY RECOGNIZED.

4.1 STATUS MESSAGES

PID	MID	RID	RAD	MOD1	MOD2
0300	A001	0001	RRRR	000Y	00ZZ

THE MONITOR HAS STARTED EXECUTION OF, OR TERMINATED EXECUTION OF THE DFT IN CORE WHOSE PID IS ZZ. DFT EXECUTION OCCURS WHEN C.E. SWITCH 11 IS TURNED OFF, AND DFT TERMINATION OCCURS WHEN C.E. SWITCH 11 IS TURNED ON.

MOD1 000Y = 0 DFT OPERATION HAS BEEN TERMINATED (DE EXECUTED).
000Y = 1 DET OPERATION HAS BEEN STARTED (EXECUTED).
MOD2 00ZZ THE ID OF THE PROGRAM WHOSE OPERATION HAS BEEN STARTED OR TERMINATED.

PID	MID	RID	RAD	MOD1	MOD2
0300	A003	0001	RRRR	X0ZZ	YYYY

THE MONITOR ACKNOWLEDGES ACCEPTANCE OF DFT CONTROL CARDS, AND HAS STORED THE CONTROL DATA AT THE DESIGNATED FUNCTION (SWITCH) LOCATION. ONE MESSAGE WILL OCCUR FOR EACH CONTROL CARD ACCEPTED, EXCEPT THE END OF CONTROL CARD.

MOD1 X0ZZ X IS THE FUNCTION OF PROGRAM ZZ INTO WHICH THE CONTROL CARD DATA HAS BEEN STORED. THE FUNCTION NUMBERS ARE 0 THROUGH 3.
MOD2 YYYY THE HEXIDECIMAL REPRESENTATION OF THE CONTROL CARD DATA WHICH WAS STORED IN THE FUNCTION LOCATION (X IN MOD1).

4.2 COMMAND MESSAGES

0300 C002 0001 RRRR

THIS MESSAGE IS PRINTED AS A RESULT OF TURNING C.E. SWITCH 14 ON (TERMINATE ON LINE DIAGNOSTIC OPERATION).

REFER TO THE TERMINATION PROCEDURE, SECTION 3.4, THEN TURN ALL C.E. SWITCHES OFF TO EFFECT THE TERMINATION.

4.3 DATA MESSAGES

PID MID RID RAD MOD1 MOD2 MOD3 MOD4
0300 D001 0001 RRRR ZZ00 07FF XXXX YYYY

THIS MESSAGE IS PRINTED FOLLOWING THE SUCCESSFUL LOADING AND EDITING OF A DFT. THE MESSAGE INFORMS THE OPERATOR WHICH PROGRAM WAS LOADED AND WHERE IT IS LOCATED IN CORE STORAGE.

MDD1 ZZ00 THE ID OF THE PROGRAM JUST LOADED.
MOD2 07FF THE PROGRAM ORIGIN AT WHICH THE DFT WAS ASSEMBLED
MOD3 XXXX ADDRESS AT WHICH DFT WAS ACTUALLY LOADED. MOD3 = (MOD2 + MOD4).
MOO4 YYYY RELOCATION FACTOR USED IN LOADING THE DFT. THE RELOCATION FACTOR IS OBTAINED BY SUBTRACTING 2047 FROM THE 1ST ODD LOCATION OF VARIABLE CORE.

PIO MID RID RAD MOD1 MOD2 MOD3 MOD4
0300 D002 0001 RRRR 0000 XXXX YYYY ZZZZ

THIS MESSAGE IS PRINTED FOLLOWING THE SUCCESSFUL LOADING AND EDITING OF THE ON LINE DIAGNDSTIC MONITOR. IT IS USED TO INFORM THE OPERATOR OF THE VARIABLE CORE LOCATION AT WHICH THE MONITOR WAS LOADED.

MOD1 0000 THE RELOCATABLE ORIGIN AT WHICH MPXDM WAS ASSEMBLED.
MDD2 XXXX ADDRESS AT WHICH MPXDM WAS ACTUALLY LOADED. THIS AODRESS ALSO DEFINES THE START OF THE DFT OVERLAY AREA.
MOD3 YYYY THE ACTUAL ADDRESS AT WHICH MPXDM PROPER BEGINS.
MOD4 ZZZZ RELOCATION FACTDR. THE RELOCATION FACTOR IS OBTAINED BY ADDING THE ADDRESS IN MDD2 TO THE ORG. ADDRESS IN MOD1.

4.4 ERROR MESSAGES

ALL ERROR MESSAGES ARE PRINTED VIA THE ABORT ROUTINE WITH THE EXCEPTIUN OF THE MPX/MPXOM INCOMPATIBILITY MESSAGE WHICH IS PRINTED BY ROUTINE DMIN.

THE ORIGIN OF THE ABORT CALL AND A RECOVERY PROCEDURE IS INCLUDED IN THE EXPLANATION OF EACH ERROR MESSAGE.

WHEN THE AREA CODE OF A DEVICE IS INCLUDED IN THE MESSAGE, IT IS IN HEXIDECIMAL NOTATIUN AND LEFT JUSTIFIED IN BITS 1 THROUGH 4 (AS IT APPEARS IN AN IOCC WORD).

EXAMPLE DIGITAL INPUT AREA = 11 DECIMAL
11 DECIMAL = 000B HEXIDECIMAL
000B LEFT JUSTIFIED = 5800
5800 WOULD BE PRINTED IN THE MESSAGE.

MPX/MPXDM NOT COMPAT-MPXDM VER 0001

THE VERSION OF MPXDM JUST LOADED IS NOT COMPATIBLE WITH THE VERSION OF THE OPERATING MPX SYSTEM. BOTH MPX AND MPXDM MAINTAIN A VERSION CHECK WORD. THE CHECK WORDS MUST BE IDENTICAL IN ORDER TO OPERATE THE ON LINE DIAGNOSTIC MONITOR.

ANY CHANGE TU MPX WHICH REQUIRES A CHANGE TO MPXDM, RESULTS IN A CHANGE OF THE VERSION NUMBER. THE VERSION CHECK WORDS ARE CHANGED AT ASSEMBLY TIME.

FOLLOWING THE OUTPUT OF THIS MESSAGE, MPXDM WILL CALL ON THE MPX EXIT ROUTINE AND THE ON LINE MONITOR OPERATION WILL BE TERMINATED.

ORIGIN OF ABURT CALL - ROUTINE OMIN

RECOVERY PROCEDURE.

OBTAIN THE CURRECT VERSION OF MPXDM AND RELOAD IT ACCORDING TO THE OPERATING PROCEDURES SECTION 3.2.

PID MID RID RAD MOD1
0300 E010 0001 RRRR XXXX

THE OPERATING DFT HAS REQUESTED A DEVICE WHICH HAS NOT BEEN DEFINED IN THE DIAGNOSTIC MONITOR SYSTEM EDIT. FOR EVERY DDEF EDITED IN A DFT, THERE MUST BE A MATCHING DDEF IN THE MONITOR EDIT.

MPXDM WILL DE-EXECUTE THE DFT FOLLOWING THE PRINT OUT.

MOD1 XXXX THE DDEF AS IT APPEARED IN THE DFT REQUEST DEVICE CALL.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE.

1. IF THE DDEF (MOD1) IS IN ERROR, REPUNCH THE EDIT CARD FOR THE DFT TO REFLECT THE CORRECT DDEF, THEN FOLLOW RELOAD PROCEDURE 3 SECTION 3.3.3.

2. IF THE DDEF (MOD1) IS VALID, BUT THE SAME DDEF WAS NOT IN THE MONITOR EDIT, THEN A RELOAD OF MPXDM WILL BE REQUIRED. MODIFY THE MONITOR EDIT TO INCLUDE THE MISSING DDEF (AND ITS AREA CODE). TERMINATE ON LINE DIAGNOSTIC OPERATION BY FOLLOWING THE TERMINATION PROCEDURE, SECTION 3.4, THEN RELOAD THE DIAGNOSTIC DECK ACCORDING TO THE PROGRAM LOAD PROCEDURE, SECTION 3.2.1.

PID MID RID RAD MOD1 MOD2 MOD3
0300 E011 0001 RRRR XXXX YYYY ZZZZ

THE OPERATING DFT REQUESTED A DEVICE ALREADY ASSIGNED TO IT. THIS IS A LOGIC ERROR AND CAN BE CAUSED BY LOSS OF DFT CONTROL OR SEQUENCING (INCORRECT BRANCH, INSTRUCTION FAILURE ETC).

THE DFT WILL BE DE-EXECUTED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE DDEF OF THE DEVICE PRESENTLY ASSIGNED TO THE DFT.

MOD2 YYYY THE AREA CODE OF THE DEVICE PRESENTLY ASSIGNED TO THE DFT.

MOD3 ZZZZ THE DDEF OF THE DEVICE PRESENTLY BEING REQUESTED. THIS DDEF WILL BE THE SAME AS MOD1. BIT 0 OF MOD 3 WILL ALSO BE ON INDICATING DEVICE ASSIGNED.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE.

RELOAD THE DFT ACCORDING TO THE'LOAD NEW DFT' PROCEDORE, SECTION 3.2.3.

PID MID RID RAD MOD1 MOD2 MOD3
0300 E012 0001 RRRR XXXX YYYY ZZZZ

THE DFT MADE A REQUEST DEVICE CALL WITH A DIFFERENT DDEF THAN THE ONE IT USED ON PREVIOUS REQUESTS. THE DFT IS ALLDWED TO RUN ONLY 1 DEVICE EACH TIME IT IS EXECUTED.

WHERE MULTIPLE DEVICES EXIST WITH THE SAME AREA CODE, AS WITH THE 1053/1816, A NEW DEVICE MAY BE SELECTED FOR TEST (VIA CONTROL CARDS) DNLY AFTER THE CURRENT OPERATION IS DE-EXECUTED. CHANGING DEVICES IN THE MIDDLE OF A DFT PASS WILL RESULT IN THIS ERROR.

THE DFT WILL BE DE-EXECUTED FOLLOWING THIS PRINTOUT.

MOD1 XXXX DDEF OF THE DEVICE REQUESTED ON PREVIOUS CALLS.
MOD2 YYYY AREA CODE OF THE DEVICE REQUESTED DN PREVIOUS CALLS.
MOD3 ZZZZ DDEF OF THE DEVICE PRESENTLY BEING REQUESTED.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE

RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD MOD1 MOD2
0300 E013 0001 RRRR XXXX YYYY

THE DFT REQUESTED A DEVICE WHICH IT WAS NOT DESIGNED TO TEST. THIS ERROR RESULTS FROM INCORRECT EDITING. EITHER THE DDEF PUNCHED IN DFT EDIT CARDS IS INCORRECT, OR THE AREA CODE RELATING TU THAT DDEF WAS INCORRECTLY PUNCHED IN THE MONITOR EDIT CARDS.

THE DFT WILL BE DE-EXECUTED FULLOWING THIS PRINTOUT.

MOD1 XXXX THE DDEF AS IT APPEARED IN THE DFT REQUEST DEVICE CALL.
MOD2 YYYY THE AREA CODE EDITED IN THE MONITOR FUR THE DDEF IN MOD1.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE

1. IF THE DFT EDIT IS INCORRECT (MOD1), REPUNCH THE DFT EDIT CARDS TO REFLECT THE CORRECT DDEF THEN RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

2. IF THE AREA CODE IN THE MONITOR IS INCORRECT (MOD2) REPUNCH THE MONITOR EDIT CARDS TO REFLECT THE CORRECT AREA CUDE. TERMINATE ON LINE DIAGNOSTIC OPERATION BY FOLLUWING THE TERMINATION PROCEDURE, SECTION 3.4. THEN RELOAD THE DIAGNOSTIC DECK ACCORDING TO THE PROGRAM LOAD PROCEDURE, SECTION 3.2.1.

PID MID RID RAD MUD1 MOD2 MOD3 MOD4
0300 E014 0001 RRRR XXXX YYYY ZZZZ 0000

THE DEVICE REQUESTED BY THE DFT IS UNDEFINED IN THE MPX SYSTEM. THE DEVICE IS CONSIDERED UNDEFINED WHEN THE DEVICE TABLE ADDRESS (IN THE MPX FIXED AREA OF CORE) FOR THE REQUESTED DEVICE IS ZERO.

THE DFT WILL BE DE-EXECUTED FOLLOWING THE PRINTOUT-

MOD1 XXXX THE DDEF UF THE REQUESTED DEVICE.
MOD2 YYYY THE AREA CODE OF THE REQUESTED DEVICE.
MOD3 ZZZZ THE ADDRESS IN THE MPX FIXED AREA UF CORE WHERE THE DEVICE TABLE ADDRESS IS STORED.
MOD4 0000 THE DEVICE TABLE ADDRESS FOR THE REQUESTED DEVICE.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE

1. TO LOAD A NEW DIAGNOSTIC TEST FOR A DEFINED DEVICE, FOLLOW THE PRUCEDURE FOR 'LUADING NEW DFT', SECTION 3.2.3.

2. TO TERMINATE ON-LINE OPERATIONS, FULLOW THE PROGRAM TERMINATION PRUCEDURE, SECTION 3.4.

PID MID RID RAD MOD1 MOD2
0300 E015 0001 RRRR XXXX YYYY

THE INTERROPT LEVEL SPECIFIED IN THE DDEF, CHARACTERS 0 AND 1, IS GREATER THAN 17 HEX (23 DEC). THIS IS AN ILLEGAL INTERROPT LEVEL. THE DDEF IS INCORRECTLY EDITED IN THE DFT AND MONITOR EDIT CARDS.

THE DFT WILL BE DE-EXECUTED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE DDEF IN ERROR.
MOD2 YYYY THE AREA CODE ASSIGNED TO THE DDEF IN MOD1.

ORIGIN OF ABORT CALL - ROUTINE RQDV

RECOVERY PROCEDURE.

REPUNCH THE DFT AND MONITOR EDIT CARDS TO REFLECT THE CORRECT DDEF. TERMINATE MPXDM ACCORDING TO THE TERMINATION PROCEDURE, SECTION 3.4, THEN RELOAD THE DIAGNOSTIC DECK ACCORDING TU THE PROGRAM LUAD PROCEDURE, SFCTION 3.2.1.

PID MID RID RAD MOD1 MOD2 MOD3
0300 E016 0001 RRRR XXXX YYYY ZZZZ

THE INTERRUPT LEVEL TU WHICH THE REQUESTED DEVICE IS ASSIGNED IS MASKED. THE DEVICE CANNOT BE RUN WITH A MASKED INTERRUPT LEVEL.

THE DFT WILL BE DE-EXECUTED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE DDEF OF THE RQUESTED DEVICE. THE INTERKUPT LEVEL IS IN CHARACTERS 1 AND 2.
MOD2 YYYY MPX SYSTEM USER MASK REGISTER 1 - LEVELS 1 THROUGH 13 IN BIT POSITIONS 1 THROUGH 13.
MOD3 ZZZZ MPX SYSTEM USER MASK REGISTER 2 - LEVELS I4 THROUGH 23 IN BIT POSITIONS 1 THROUGH 9.

ORIGIN OF ABORT CALL - RUUTINE RQDV

RECOVERY PRUCEDURE

RELOAD THF DIAGNOSTIC FUNCTION TEST ACCORDING TU THE 'LUAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD MOD1 MOD2
0300 E017 0001 RRRR XXXX YYYY

THE DEVICE REQUESTED BY THE DFT IS NOT OFF-LINE, AND CANNUT BE TESTED.

THE DFT WILL BE DE-EXECTUED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE DDEF OF THE DEVICE BEING REQUESTED.
MOD2 YYYY THE AREA CODE OF THE DEVICE BEING REQUESTED.

URIGIN OF ABORT CALL - RUUTINE RQDV

RECUVERY PROCEDURE.

RELUAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3. INSURE C.E. SWITCH 11 IS ON AT LUAD TIME (LOAD AND PAUSE) SO THAT THE DEVICE MAY BE TAKEN OFF LINE AFTER LUADING HAS BEEN COMPLETED.

PID MID RID RAD MOD1 MOD2
0300 E020 0001 RRRR XXXX YYYY

THE DFT HAS SPECIFIED THE RELEASE OF A DEVICE WHICH IT DID NOT PREVIUUSLY REQUEST. THIS IS A DFT LOGIC ERROR AND CAN BE CAUSED BY LUSS UF DFT CONTROL OR SEQUENCING (INCORRECT BRANCH, INSTRUCTION FAILURE ETC).

THE DFT WILL BE DE-EXECUTED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE DDEF OF THE DEVICE WHICH WAS PREVIOUSLY REQUESTED.
MOD2 YYYY THE DDEF OF THE DEVICE SPECIFIED FUR RELEASE AS IT APPEARED IN THE RELEASE DEVICE CALL.

ORIGIN UF ABORT CALL - ROUTINE RLDV

RECOVERY PROCEDURE.

RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECT. 3.2.3.

PID MID RID RAD MOD1 MOD2
0300 E021 0001 RRRR XXXX 1001

THE DFT OBJECT DECK AND PATCH CARD LUADER, MPDMI, HAS BEEN ENTERED FOR EXECUTION, BUT WAS NOT CORRECTLY CALLED BY THE CONTRUL SECTION. PRIUR TU BRANCHING TO ANY UF THE 3 LOADERS, THE CONTROL SECTION STORES AN ID WORD IN LUCATION LCLID (FFD9). WHEN THE LUADER IS ENTERED, IT COMPARES ITS CHECK WORD AGAINST THE CONTENTS OF LCLID. THIS ERROR OCCURS WHEN THE 2 WORDS DO NOT CUMPARE.

THIS ERROR IS A LOGIC FAILURE WITHIN MPXDM, AND ON LINE UPERATION WILL BE TERMINATED FOLLOWING THE PRINTUUT.

MOD1 XXXX THE CONTENTS OF LOCATION LCLID.
MOD2 1001 THE CHECK WORD ASSIGNED TU MPDM1.

ORIGIN OF ABORT CALL - LOADER MPDMI

RECOVERY PROCEDURE.

RELOAD THE ON LINE DIAGNUSTIC SYSTEM ACCORDING TU THE 'PROGRAM LOAD' PROCEDURE, SECTION 3.2.1.

PID MID RID RAD MOD1 MOD2
0300 E022 0001 RRRR XXXX YYYY

A CHECKSUM ERROR WAS DETECTED WHILE READING THE DFT OBJECT DECK. BESIDES HAVING AN ACTUAL BAD CARD, A CHECKSUM ERROR WILL UCCUR IF THE UBJECT DECK IS OUT OF SEQUENCE, OR IF THE UBJECT DECK IS IN 8-8 FORMAT.

THE READING OF THE DFT WILL BE TERMINATED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE CARD SEQUENCE NUMBER, IN HEX, ON WHICH THE CHECKSUM UCCURED. IF THE CARDS ARE OUT OF SEQUENCE, THEN MOD1 CONTAINS THE EXPECTED CARD SEQUENCE NUMBER.
MOD2 YYYY THE CHECKSUM AS COMPUTED BY THE LUADER. A CORRECT CHECKSUM IS 0000.

ORIGIN UF ABORT CALL - LOADER MPDM1.

RECOVERY PROCEDURE.

CLEAR THE REMAINDER OF THE UN LINE DIAGNUSTIC DECK FROM THE 1442. CORRECT THE CAUSE OF THE CHECKSUM AND THEN RELOAD THE DFT ACCORDING TU THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3

PID MID RID RAD
0300 E023 0001 RRRR

THE DFT OBJECT DECK BEING LOADED IS NOT RELOCATABLE AND CANNOT BE RUN.

THE LOADING OPERATIDN WILL BE TERMINATED FOLLDWING THE PRINTOUT.

ORIGIN OF ABORT CALL - LDADER MPDM1.

RECOVERY PROCEDURE.

CLEAR THE REMAINDER DF THE DIAGNOSTIC DECK FROM 1442, OBTAIN AN ON LINE COMPATABLE DFT AND LOAD IT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E024 0001 RRRR

THE DFF LINE DFT/MONITOR INTERFACE TRANSFER VECTORS WERE NOT MODIFIED TO CONTAIN THEIR ON LINE COUNTER PARTS.

THIS ERROR WILL OCCUR WHEN THE DFT JUST LDADED WAS ASSEMBLED WITHOUT SPECIFYING THE ASSEMBLER OPTION WHICH CHECKS FOR AND IDENTIFIES OFF LINE TRANSFER VECTDRS. AN OFF LINE VECTOR IS FLAGGED BY A BIT CONFIGURATION DF 10 IN THE RELDCATIDN FIELD (APPEARS AS A 2 IN THE PROGRAM LISTING). WHEN THE DFT LOADER ,MPDM1, DETECTS THE 1-0 PATTERN, IT WILL REPLACE THE REFERENCED WORD WITH ITS CORRESPONDING DN LINE VECTDR.

ORIGIN OF ABORT CALL - ROUTINE MPDM1.

RECOVERY PROCEDURE.

OBTAIN A CORRECT DFT DECK AND LOAD IT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E025 0001 RRRR

THE DFT JUST LOADED IS NOT COMPATIBLE WITH ON LINE DPERATIONS.

EACH DFT CONTAINS A COMPATIBILITY WORD IN ITS STANDARD 'FRONT END' SECTION. WHEN THE DFT HAS BEEN CONVERTED AND TESTED FOR ON LINE OPERATIONS, THIS WORD WILL BE PERMANENTLY ASSEMBLED TO A PRE-DETERMINED VALUE.

ORIGIN OF ABORT CALL - LOADER MPDM1

RECOVERY PROCEDURE.

OBTAIN THE CORRECT DFT DECK AND LOAD IT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E026 0001 RRRR

A BLANK CARD WAS READ DURING DFT INPUT.

ORIGIN OF ABORT CALL - SUBROUTINE TYPE.

RECOVERY PROCEDURE.

REMOVE BLANK CARDS FROM THE OBJECT DECK AND RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PRDCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E027 0001 RRRR

A BLANK CARD OR 8-8 FORMAT OBJECT CARD WAS READ DURING DFT INPUT.

DRIGIN OF ABORT CALL - SUBROUTINE TYPE.

RECOVERY PROCEDURE.

INSURE THAT NO BLANK OR 8-8 FORMAT CARDS ARE IN THE DFT OBJECT DECK. RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E028 0001 RRRR

AN EDIT CARD WAS READ PRIOR TO READING A DFT OBJECT DECK END CARD.

ORIGIN OF ABORT CALL - SUBROUTINE TYPE.

RECOVERY PROCEDURE.

INSURE THAT THE DFT DECK CONTAINS AN END CARD AND THAT ONLY DFT AND PATCH CARDS PRECEED IT. RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD
0300 E029 0001 RRRR

A CONTROL CARD WAS READ PRIOR TO READING A DFT OBJECT DECK END CARD.

ORIGIN OF ABORT CALL - SUBROUTINE TYPE.

RECOVERY PROCEDURE.

INSURE THAT THE DFT DECK CONTAINS AN END CARD AND THAT ONLY DFT AND PATCH CARDS PRECEED IT. RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD MOD1 MOD2
0300 E030 0001 RRRR XXXX YYYY

A DFT OBJECT CARD OR PATCH CARD SPECIFIED AN ADDRESS WHICH EXCEEDED THE UPPER CORE BOUNDARY (THE RELOCATED ADDRESS) ASSIGNED TO THE DFT CORE AREA.

MOD1 XXXX AMOUNT OF CORE AREA AVAILABLE TO THE DFT.
MOD2 YYYY UPPER CORE BOUNDARY ADDRESS.

ORIGIN OF ABORT CALL - SUBROUTINE CKADR.

RECOVERY PROCEDURE.

VERIFY THAT THE CORRECT DFT DECK IS BEING USED AND THAT ANY PATCH CARDS DO NOT EXCEED, AFTER RELOCATION, THE SPECIFIED UPPER BOUNDARY. RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PIO MIO RIO RAO MOO1
0300 E031 0001 RRRR 0001

THE HEX PATCH CARD JUST READ CONTAINED OTHER THAN A 'BLANK' OR 'R' IN THE RELOCATION COLUMN BETWEEN DATA FIELDS.

MOD1 - 0001 CARD TYPE - PATCH CARD.

ORIGIN OF ABORT CALL - RDUTINE HEX.

RECOVERY PROCEDORE.

CDRRECT THE PATCH CARD IN ERROR AND RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDORE, SECTIDN 3.2.3.

PIO MID RIO RAO MOO1
0300 E032 0001 RRRR XXXX

AN 11 ZDNE PONCH WAS DETECTED IN A HEXIDECIMAL DATA COLOMN. THE OATA IS NDT HEX.

MOD1 - 0001 HEX PATCH CARO
0002 EOIT CARO
0003 DFT CONTROL CARO

ORIGIN OF ABORT CALL - ROOTINE HEX.

RECOVERY PRDCEDORE.

CORRECT THE CARD IN ERROR. IF IT WAS AN EDIT DR PATCH CARD, RELOAD THE OFT ACCORDING TO THE 'LOAO NEW DFT' PROCEDORE, SECTIDN 3.2.3. IF IT WAS A CONTROL CARO FOLLOW THE PROCEDORE FOR ENTERING CDNTROL CAROS SECTION 3.2.4.

PID MID RID RAD MOO1
0300 E033 0001 RRRR XXXX

BDTH A 12 AND A 0 ZDNE PONCH WERE DETECTED IN A HEXIDECIMAL DATA COLOMN. THE DATA IS NOT HEX.

MDD1 - 0001 HEX PATCH CARD
0002 EOIT CARD
0003 DFT CONTROL CARD

ORIGIN OF ABDRT CALL - ROOTINE HEX.

RECOVERY PROCEDORE.

CORRECT THE CARO IN ERROR. IF IT WAS AN EOIT OR PATCH CARO, RELOAD THE DFT ACCORDING TO THE 'LOAO NEW OFT' PROCEOORE SECTION 3.2.3 IF IT WAS A CONTRDL CARO, FOLLDW THE PROCEDURE FOR ENTERING CONTROL CARDS SECTION 3.2.4.

PID MID RID RAD MOD1
0300 E034 0001 RRRR XXXX

A 12 ZONE ONLY PONCH WAS DETECTED IN A HEXIDECIMAL DATA COLUMN. THE DATA IS NOT HEX.

MOD1 0001 HEX PATCH CARD
0002 EDIT CARD
0003 DFT CONTRDL CARD

ORIGIN OF ABORT CALL - ROUTINE HEX.

RECOVERY PROCEDURE.

CORRECT THE CARD IN ERROR. IF IT WAS AN EDIT OR PATCH CARD, RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, IT IT WAS A CONTROL CARD, FOLLOW THE PROCEDURE FOR ENTERING CONTROL CARDS, SECTION 3.2.4.

PID MID RID RAD MOD1
0300 E035 0001 RRRR XXXX

MULTIPLE DIGIT PONCHES WERE DETECTED IN A HEXIDECIMAL DATA COLUMN. THE DATA IS NOT HEX.

MOD1 0001 HEX PATCH CARDS
0002 EDIT CARD
0003 DFT CONTROL CARD

ORIGIN OF ABORT CALL - ROUTINE HEX.

RECOVERY PROCEDURE.

CORRECT THE CARD IN ERROR. IF IT WAS AN EDIT OR PATCH CARD, RELOAD THE DFT ACCDRDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3 IF IT WAS A CONTROL CARD, FOLLOW THE PROCEDURE FOR ENTERING CONTROL CARDS, SECTION 3.2.4.

PID MID RID RAD MOD1 MDD2
0300 E036 0001 RRRR XXXX 2002

THE EDIT CARD LOADER, MPDM2, HAS BEEN ENTERED FOR EXECUTIDN BUT WAS NOT CORRECTLY CALLED BY THE CONTROL SECTION. PRIOR TO BRANCHING TO ANY OF THE 3 LOADERS, THE CONTROL SECTION STORES AN ID WORD IN LOCATION LCLID (FFD9). WHEN THE LOADER IS ENTERED, IT COMPARES IT'S CHECK WORD AGAINST THE CONTENTS OF LCLID. THIS ERROR OCCURS WHEN THE 2 WORDS DO NOT COMPARE.

THIS ERROR IS A LOGIC FAILURE WITHIN MPXDM, AND ON LINE DIAGNOSTIC OPERATION WILL BE TERMINATED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE CONTENTS OF LOCATION LCLID.
MUD2 2002 THE CHECK WORD ASSIGNED TO MPDM2.

ORIGIN OF ABORT CALL - LOADER MPDM2.

RECDVERY PROCEDURE.

RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'LOAD PROGRAM' PROCEDURE, SECTION 3.2.1.

```
PID  MID  RIO  RAO  M001
0300 E037 0001 RRRR XX00
```

THE CARD JUST READ WAS NOT AN EDIT CARD.

MOD1 XX00 THE PIO OF THE PRDGRAM TO BE EDITED, EITHER MPXDM(0300) OR THE DFT (XX00).

DRIGIN OF ABORT CALL - LDAOER MPOM2.

RECOVERY PROCEOURE.

INSURE THAT THE EOIT DECKS CONTAIN ONLY EOIT CARDS.
1. IF THE ERROR OCCURED WHILE EDITING MPXDM(MDD1=0300) ON LINE DIAGNOSTICS WILL BE ABORTEO. RELOAD THE DN LINE OIAGNUSTIC SYSTEM ACCOROING TO THE 'LDAD PROGRAM' PROCEDORE, SECTION 3.2.1.
2. IF THE ERROR DCCURED WHILE EDITING THE DFT, RELOAD THE DFT ACCDRDING TO THE 'LDAD NEW OFT' PROCEDORE, SECTION 3.2.3.

```
PIO  MIO  RID  RAD  MD01 M002
0300 E038 0001 RRRR XX00 YY00
```

THE EOIT CARO JUST READ IS NOT FDR THE PRDGRAM BEING EDITED. (THE PIO ON THE EDIT CARD DDES NDT AGREE WITH PID DF THE PRUGRAM BEING EDITED).

MDD1 XX00 THE PID OF THE PRDGRAM BEING EDITED. EITHER MPXDM(0300) OR THE DFT (XX00).
MDD2 YY00 THE PROGRAM PID AS PUNCHED IN THE EOIT CARD.

ORIGIN DF ABDRT CALL - LOADER MPOM2.

RECUVERY PRDCEDURE.

DBTAIN THE CURRECT EDIT CARDS FDR EITHER THE MONITOR OR THE DFT TO BE RUN.
1. IF THE ERRDR OCCURED WHILE EDITING MPXDM (MOD1=0300), UN LINE DIAGNOSTICS WILL BE ABORTED. RELDAD THE DN LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'LDAD PRDGRAM' PROCEDURE, SECTION 3.2.1.
2. IF THE ERROR OCCURED WHILE EDITING THE DFT, RELDAD THE DFT ACCDRDING TD THE 'LDAO NEW DFT' PRDCEDORE, SECTIUN 3.2.3.

```
PID  MID  RIO  RAO  MOD1 MOD2 MDD3
0300 E039 0001 RRRR EDXX YYYY ZZ00
```

THE EDIT CARD JUST READ IS DUT DF SEQUENCE.

MD01 EDXX EXPECTED CARD SEQUENCE NUMBER.
MOD2 YYYY ACTUAL CARD SEQUENCE NOMBER READ.
MOD3 ZZ00 PID OF PROGRAM BEING EDITEO.

ORIGIN OF ABORT CALL - LOADER MPDM2.

RECOVERY PROCEOORE.

PLACE THE EDIT CARD DECK IN CORRECT SEQUENCE, OR OBTAIN ANY EDIT CARDS WHICH MAY BE MISSING.
1. IF THE ERROR OCCORED WHILE EOITING MPXDM (MOD3=0300). ON LINE DIAGNOSTICS WILL BE ABORTED. RELOAD THE DN LINE DIAGNOSTIC SYSTEM ACCOROING TO THE 'LOAD PROGRAM' PROCEDORE, SECTION 3.2.2.
2. IF THE ERROR OCCORED WHILE EDITING THE DFT, RELOAD THE DFT ACCORDING TD THE 'LOAO NEW DFT' PROCEDORE, SECTION 3.2.3.


```
PID  MID  RID  RAD  MOD1 MOD2 MOD3
0300 E040 0001 RRRR EDXX 0006 ZZ00
```

THE ENTRY COONT (NUMBER OF DATA FIELDS ON THE EDIT CARD) SPECIFIED BY THE 3RD HEX GRDUP ON THE CARD IS TDO LARGE. THE ENTRY CDUNT CAN NOT EXCEED HEX 'C' (DECIMAL 12).

MOD1 EDXX SEQOENCE NUMBER OF THE CARD IN ERROR.
MOD2 000Y THE ENTRY COONT AS PUNCHED IN THE CARD.
MOD3 ZZ00 PID UF THE PRUGRAM BEING EDITED.

ORIGIN DF ABORT CALL - LOADER MPOM2.

RECOVERY PRUCEDURE.

CURRECT THE ENTRY COUNT UN THE CARD IN ERROR.
1. IF THE ERROR OCCURED WHILE EDITING MPXDM (MOD3=0300) ON LINE DIAGNOSTICS WILL BE ABURTED. RELOAD THE UN LINE DIAGNOSTIC SYSTEM ACCURDING TO THE 'LUAD PROGRAM' PROCEDURE, SECTION 3.2.1.
2. IF THE ERROR OCCURED WHILE EDITING THE DFT, RELOAD THE DFT ACCURDING TU THE 'LDAD NEW DFT' PROCEDURE, SECTION 3.2.3.

```
PID  MIO  RID  RAD  MOD1 MUD2 MOD3
0300 E041 0001 RRRR ED00 000X 0300
```

MPXDM EDIT CARD ED00 CONTAINED AN ENTRY COONT GREATER THAN 2. THIS CARD SHUOLD CONTAIN ONLY THE DDEF OF THE CONSULE INTERRUPT, AND THE DDEF OF THE OOTPOT DEVICE.

MOD1 ED00 EDIT CARD SEQOENCE NUMBER.
MOD2 000X ENTRY CDUNT AS PUNCHEO ON THE CARD.
MOD3 0300 MPXDM PID.

ON LINE DIAGNUSTICS WILL BE ABURTED FOLLOWING THE PRINTOOT.

ORIGIN UF ABORT CALL - LOADER MPDM2.

RECOVERY PROCEDURE.

RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCURDING TO THE 'LOAD PROGRAM' PROCEOORE, SECTION 3.2.1.

```
PID  MID  RID  RAD  MUD1
0300 E042 0001 RRRR ZZ00
```

AN END DF EDIT CARO WAS READ (SEQUENCE NUMBER OF FFFF) PRIOR TO READING ANY EDIT DATA CARDS.

MOD1 ZZ00 PID OF THE PROGRAM BEING EDITED.

ORIGIN OF ABORT CALL - LOADER MPDM2.

RECOVERY PROCEDURE.

INSURE THAT ALL EDIT CARDS ARE INLCUDED IN THE EDIT CARD DECK FOR THE SPECIFIED PROGRAM, AND THAT THE END OF EDIT CARD IS THE LAST CARD OF THE EDIT DECK.
1. IF THE ERROR OCCURED WHILE EDITING MPXDM (MOD1=0300) ON LINE DIAGNOSTICS WILL BE ABORTED. FOLLOW RELOAD PROCEDORE 1, SECTION 3.3.1.
2. IF THE ERROR OCCORED WHILE EDITING THE DFT (MOD1=ZZ00), RELOAD THE OFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDORE, SECTION 3.2.3.

PID MID RID RAD
0300 E043 0001 RRRR

LESS THAN 4 DIAGNOSTIC MONITOR EDIT CARDS WERE READ. A MINIMUM OF 4 EDIT CARDS ARE REQUIRED BY THE OFF LINE SYSTEM, THEREFORE THAT AMOUNT IS CHECKED FOR WHEN ON LINE.
CARD 1 CONTAINS THE CONSOLE INTERRUPT AND OUTPUT DEVICE DDEF'S.
CARD 2 DEFINES THE OFF LINE INTERRUPT LEVELS TO BE USED. (THIS CARD IS CHECKED FOR ON LINE BUT NOT USED).
CARD 3 IS THE 1ST CARD OF 'N' NUMBER OF CARDS WHICH DEFINE THE DEVICES TO THE MONITOR (DDEF AND CORRESPONDING AREA CODE).
CARD 4 IS THE MONITOR EDIT END CARD.

ON LINE DIAGNOSTICS WILL BE ABORTED FOLLOWING THIS PRINTOUT.

ORIGIN OF ABORT CALL - LOADER MPDM2.

RECOVERY PROCEDURE.

ADD THE MISSING EDIT CARDS TO THE MONITOR EDIT CARD DECK AND THEN RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'PROGRAM LOAD' PROCEDURE, SECTION 3.2.1.

PID MID RID RAD MOD1 MOD2
0300 E044 0001 RRRR XXXX 4004

THE CONTROL CARD LOADER AND ANALYZER, MPDM4, HAS BEEN ENTERED FOR EXECUTION BUT WAS NOT CORRECTLY CALLED BY THE CONTROL SECTION. PRIOR TO BRANCHING TO ANY OF THE 3 LOADERS, THE CONTROL SECTION STORES AN ID WORD IN LOCATION LCLID(FFD9). WHEN THE LOADER IS ENTERED, IT COMPARES ITS CHECK WORD AGAINST THE CONTENTS OF LCLID. THIS ERROR OCCURS WHEN THE 2 WORDS DO NOT COMPARE.

THIS ERROR IS A LOGIC FAILURE WITHIN MPXDM, AND ON LINE DIAGNOSTIC OPERATION WILL BE TERMINATED FOLLOWING THE PRINTOUT.

MOD1 XXXX THE CONTENTS OF LOCATION LCLID.
MOD2 4004 THE CHECK WORD ASSIGNED TO MPDM4.

ORIGIN OF ABORT CALL - LOADER MPDM4.

RECOVERY PROCEDURE.

RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'PROGRAM LOAD' PROCEDURE, SECTION 3.2.1.

PID MID RID RAD
0300 E045 0001 RRRR

THE CARD JUST READ WAS EITHER INCORRECTLY DEFINED AS A CONTROL CARD OR WAS A CARD TYPE OTHER THAN A CONTROL CARD. CONTROL CARDS ARE DEFINED TO MPXDM BY '$$FN' PUNCHED IN COLUMNS 1 THROUGH 4.

ORIGIN OF ABORT CALL - LOADER MPDM4.

RECOVERY PROCEDURE.

CORRECT THE CONTROL CARD IN ERROR AND THEN FOLLOW THE PROCEDURE FOR READING CONTROL CARDS, SECTION 3.2.4.

PID MID RID RAD MOD1
0300 E046 0001 RRRR 000X

THE FUNCTION NUMBER SPECIFIED IN COLUMN 5 OF THE CONTROL CARD IS INCORRECT. THE ACCEPTABLE FUNCTION NUMBERS ARE 0,1,2, AND 3 FOR DATA CONTROL CARDS, AND 'F' FOR THE END CONTROL CARD.

MOD1 000X THE FUNCTION NUMBER AS PUNCHED IN THE CONTROL CARD.

ORIGIN OF ABORT CALL - LOADER MPDM4.

RECOVERY PROCEDURE.

CORRECT THE CONTROL CARD IN ERROR AND THEN FOLLOW THE PROCEDURE FOR READING CONTROL CARDS, SECTION 3.2.4.

PID MID RID RAD MOD1
0300 E047 0001 RRRR 000X

AN EDIT OR CONTROL CARD DID NOT CONTAIN A BLANK COLUMN BETWEEN DATA FIELDS. EACH DATA FIELD OF 4 COLUMNS MUST BE SEPARATED BY A BLANK COLUMN.

MOD1 0002 ERROR WAS ON A EDIT CARD.
0003 ERROR WAS ON A CONTROL CARD.

ORIGIN OF ABORT CALL - ROUTINE HEX.

RECOVERY PROCEDURE.

CORRECT THE CARD IN ERROR.
1. IF AN EDIT CARD ERROR,

   A. DURING MPXDM EDIT, RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'PROGRAM LOAD' PROCEDURE, SECTION 3.2.1.

   B. DURING DFT EDIT, RELOAD THE DFT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

2. IF A CONTROL CARD ERROR, FOLLOW THE PROCEDURE FOR READING CONTROL CARDS, SECTION 3.2.4.

PID MID RID RAD MOD1
0300 E048 0001 RRRR ZZ00

THE DFT WHOSE PID IS MOD1, DOES NOT HAVE A DEVICE ASSIGNED TO IT FOR ON LINE OPERATION. THIS ERROR WILL OCCUR WHEN A PROGRAM WITH A FICTITIOUS OR 'PATCHED' PID HAS BEEN LOADED FOR OPERATION. SINCE OVERLAP OPERATION IS NOT ALLOWED ON LINE, THERE IS NO NEED FOR MULTIPLE PIDS IDENTIFYING THE SAME PROGRAM AND ONLY THAT DFT WHICH CONTAINS THE ASSIGNED PID WILL BE ACCEPTED ON LINE.

MOD1 ZZ00 THE PID OF THE PROGRAM IN CORE.

ORIGIN OF ABORT CALL - ROUTINE RQDV.

RECOVERY PROCEDURE.

OBTAIN THE CORRECT DFT AND LOAD IT ACCORDING TO THE 'LOAD NEW DFT' PROCEDURE, SECTION 3.2.3.

PID MID RID RAD MDD1 MDD2
0300 E049 0001 RRRR XX00 YY00

THE PID PUNCHED IN THE CONTROL CARD JUST READ DOES NOT AGREE WITH THE PID OF THE DFT EXECUTING IN CORE.

MOD1 XX00 THE PID OF THE DFT PRESENTLY IN CORE.
MDD2 YY00 THE PID AS PUNCHED IN THE CONTRDL CARD.

ORIGIN OF ABORT CALL - LOADER MPDM4

RECOVERY PROCEDURE

CORRECT THE PID IN THE CONTRDL CARD, OR OBTAIN A PREVIOUSLY PUNCHED CORRECT CONTRDL CARD AND THEN FOLLOW THE PROCEDURE FOR READING CONTRDL CARDS, SECTION 3.2.4.

PID MID RID RAD
0300 ECXX 0001 RRRR

AN ERROR WAS DETECTED DURING THE READING OF MPXDM EDIT CARDS, DFT OBJECT OR EDIT CARDS,OR DFT CONTRDL CARDS.

ECXX - EC04 = 1442 PARITY ERROR
- EC05 = 1442 FEED CHECK
- EC06 = 1442 READ/PUNCH CHECK

ORIGIN OF ABORT CALL - ROUTINE READ1

RECOVERY PROCEDURE.

1. IF THE ERROR OCCURED DURING THE READING OF MPXDM EDIT CARDS, RELOAD THE ON LINE DIAGNOSTIC SYSTEM ACCORDING TO THE 'PROGRAM LOADING' PROCEDURE SECTION 3.2.1.

2. IF THE ERROR OCCURED DURING THE READING OF DFT OBJECT OR EDIT CARDS, RELOAD THE DFT ACCORDING TO THE 'LOADING NEW DFT' PROCEDURE, SECTION 3.2.3.

3. IF THE ERROR OCCURED DURING THE READING OF DFT CONTRDL CARDS, RE-ENTER THE CONTRDL CARDS ACCORDING TO THE 'READING CONTRDL CARDS' PROCEDURE, SECTION 3.2.4.

5. COMMENTS

5.1 MPXDM GENERAL DESCRIPTION

MPXDM IS A DUAL INTERFACE DIAGNOSTIC MONITOR. ONE INTERFACE IS TO THE DIAGNOSTIC FUNCTION TEST, AND THE OTHER IS TO THE MPX SYSTEM.

DFT INTERFACE

THE INTERFACE TO THE DFT IS SUCH THAT THE DFT SEE'S NO DIFFERENCE BETWEEN IT AND THE OFF LINE DIAGNOSTIC MONITOR INTERFACE.

THE INTERFACE BETWEEN MPXDM AND THE DFT CONSISTS OF SEVEN BASIC ROUTINES AND THEIR SUPPORTING SUBROUTINES. THE DFT CALLS THESE ROUTINES VIA THE ROUTINE TRANSFER VECTORS LOCATED IN THE MPXDM HIGH CORE COMMUNICATIONS AREA.

ROUTINE NAME	XFER VECTOR NAME	HEX VECTOR LOCATION
BGIN	BEGIN	FFF5
STRT	START	FFF6
MEND	END	FFF7
LG	LOG	FFF8
ERR	ERROR	FFF9
RQDV	REQDV	FFFA
RLDV	RELDV	FFFB

ALTHOUGH THE INTERFACE VECTOR ADDRESSES ARE ASSEMBLED AS 012C THROUGH 0132 HEX. FOR OFF LINE DIGNOSTIC OPERATION, THE MPXDM OBJECT DECK LOADER WILL REPLACE ANY DFT REFERENCE TO THESE VECTORS WITH THEIR ON LINE VECTOR EQUIVALENT.

ROUTINE BGIN

THIS ROUTINE IS THE INITIAL INTERFACE BETWEEN MPXDM AND THE DFT. THE DFT CALLS THIS ROUTINE AFTER RECEIVING THE 'END CARD' BRANCH. THE DFT USES THIS ROUTINE TO NOTIFY MPXDM OF ITS PROGRAM ID, AND MPXDM IN TURN SETS THE DFT ON LINE INDICATOR.

ROUTINE STRT

THIS ROUTINE IS USED TO ALTERNATE MAIN LINE CONTROL BETWEEN MPXDM AND THE DFT. EACH ENTRY TO STRT RESULTS IN THE 'OTHER' PROGRAM RECEIVING CONTROL. STRT ALSO HAS THE RESPONSIBILITY OF STARTING THE 'NO RESPONSE TIME OUT' OPERATION WHEN THE DFT CALLS IT WITH AN INTERRUPT PENDING.

ROUTINE MEND

THIS ROUTINE IS CALLED BY THE DFT AT THE COMPLETION OF A PROGRAM PASS, AND BY MPXDM WHEN DFT DE-EXECUTION IS SPECIFIED BY C.E. SWITCH 11. IF CALLED BY THE DFT, MEND WILL CAUSE A RETURN TO THE DFT VIA IT'S LOOP PROGRAM ADDRESS. IF CALLED BY MPXDM, MEND WILL CAUSE DFT DE-EXECUTION.

ROUTINE LG

THIS ROUTINE PROVIDES THE FUNCTIONS OF BINARY TO HEX OR DECIMAL PRINT CODE CONVERSION, AND CAUSES THE MPXDM AND DFT MESSAGES TO BE PRINTED VIA THE MPX SYSTEM PRINT ROUTINES.

ROUTINE ERR

THIS ROUTINE PROVIDES (VIA C.E. SWITCH 12 AND 13 SETTINGS) THE CONTRDL OVER THE FUNCTIONS OF LOOP ON DFT ERROR AND BYPASS DFT ERROR PRINTOUT.

ROUTINE RQDV

THIS ROUTINE VERIFIES THAT ALL CONDITIONS NECESSARY TO TEST THE DEVICE ON LINE HAVE BEEN MET. THESE CONDITIONS INCLUDE, LEGAL DDEF, CORRECT AREA CODE, DEVICE DEFINED IN MPX SYSTEM, SINGLE DEVICE BEING REQUESTED, INTERRUPT LEVEL UNMASKED AND THE DEVICE IS LOGICALLY OFF LINE IF NOT CAPABLE OF BEING SHARED. IN ADDITION RQDV INSURES THAT THE MPX DEVICE TABLE INTERRUPT VECTOR FOR THE DEVICE UNDER TEST IS SET, AND THAT THE VARIABLE CORE AREA BUSY WORD IS INCREMENTED WHEN THE DEVICE IS TO CAUSE AN INTERRUPT. WHEN ALL CONDITIONS ARE SATISFIED, RQDV ASSIGNS THE DEVICE TO THE DFT.

RDUTINE RLOV

THIS ROUTINE REMOVES THE DEVICE FROM ASSIGNMENT TO THE DFT. IT ALSO INSURES THAT THE VARIABLE CORE AREA BUSY WORD IS PROPERLY DECREMENTED, THAT THE DEVICE TABLE INTERRUPT VECTOR IS RESTORED AND THAT THE 'NO RESPONSE' TIMEOUT OPERATION IS STOPPED.

BESIDES THE SEVEN INTERFACE ROUTINES, THE FOLLOWING ROUTINES ARE CONTAINED WITHIN MPXDM TO FULFILL IS FUNCTION.

ROUTINE DMIN

USED TO INITIALIZE THE DIAGNOSTIC MONITOR UPON COMPLETION OF LOADING. IT VERIFIES MPX/MPXDM COMPATABILITY, SETS UP THE HIGH CORE COMMUNICATIONS AREA AND CAUSES THE MPXDM EDIT CARDS TO BE READ. THIS RDUTINE IS REQUIRED ONLY AT LOAD TIME AND WILL BE OVERLAID BY THE 1ST DFT LOADED.

ROUTINE DMIR

DIAGNOSTIC MONITOR INTERRUPT ROUTINE. TRAPS ALL INTERRUPTS GENERATED BY THE DEVICE UNDER TEST AS A RESULT OF AN XIO ISSUED BY THE DFT. PASSES CONTROL TO THE DFT FOR INTERRUPT SERVICE AND RETURNS TO THE MPX INTERRUPT PROGRAM.

RDUTINE MCTRL

DIAGNOSTIC MONITOR CONTROL RDUTINE. CONTINOUSLY MONITORS THE C.E. SWITCHES AND PERFORMS OR CAUSES TO BE PERFORMED, THOSE OPERATIONS SPECIFIED IN THE C.E. SWITCHES. THIS RDUTINE ALSO INITIATES THE LOADING OF THE DFT OBJECT DECK, IT'S EDIT CARDS AND CONTROL CARDS.

ROUTINE TMDUT

THIS ROUTINE IS USED TO PROVIDE A 'NO RESPONSE' TIME OUT FOR ALL DFT ISSUED I/O OPERATIONS TO THE DEVICE UNDER TEST. FAILURE TO RECEIVE AN INTERRUPT IN 4 TO 6 SECONDS CAUSES THE DIAGNOSTIC SYSTEM TO BE REMOVED FROM AN 'INTERRUPT PENDING' CONDITION AND A LOST INTERRUPT ERROR TO BE PRINTED BY THE DFT.

ROUTINE RESTR

THIS RDUTINE IS USED TO RESTORE THE MPX/MPXDM INTERFACE TO A 'NO INTERRUPT PENDING' STATE. IT WILL ALSO STOP THE 'NO RESPONSE' TIME DUT DPERATION, DECREMENT THE VARIABLE CORE BUSY INDICATUR, RESTDRE THE DEVICE TABLE INTERRUPT VECTDR AND RE INITIALIZE THE MPXDM INTERRUPT CONTROL WORDS.

LOADER MPDM1

THIS LOADER IS USED TO INPUT THE DIAGNUSTIC FUNCTION TEST AND ANY 'PATCH' CARDS ASSOCIATED WITH IT. IT WILL RELOCATE THE DFT IN CURE AND TRANSFER TU IT.

LOADER MPDM2

THIS LOADER IS USED TO INPUT BOTH MPXDM AND DFT EDIT CARDS. IT VERIFIES EACH CARD FOR CORRECT PID, SEQUENCE NUMBER AND LEGAL CONTENT THEN STORES THE DATA IN THE CORRECT PROGRAM.

LOADER MPDM4

THIS LOADER IS USED TO INPUT THE DFT CONTROL CARDS. IT VERIFIES EACH CARD READ FOR LEGAL CONTENT AND THEN STORES THE DATA AT THE DESIGNATED DFT LOCATION.

RUUTINE READI

THIS RUUTINE IS USED BY THE 3 LOADERS TO CONTROL THE READING OF OBJECT, PATCH, EDIT AND CONTROL CARDS. THIS ROUTINE CALLS THE CARDZ ROUTINE TU PERFORM THE ACTUAL READ FUNCTION. THE 1442 WILL BE PLACED LOGICALLY ON LINE, IF IT IS OFF LINE, IN ORDER TO INPUT CARDS, AND THEN RESTORED TU OFF LINE IF THAT WAS ITS INITIAL STATUS.

RUUTINE ABRT

ALL ERRURS DETECTED BY MPXDM (NUT DEVICE UNDER TEST ERRURS), WILL RESULT IN A CALL ON THIS RUUTINE. ABRT WILL PRINT AN ERRUR MESSAGE DEFINING THE ERRUR AND THEN PERFORM A CUNTRUL CARD ABORT, DFT ABORT UR A COMPLETE DIAGNUSTIC SYSTEM ABURT DEPENDING ON THE NATURE OF THE ERROR.

ROUTINE CARDZ

CARDZ IS A MPX SYSTEM ROUTINE AND IS THE SAME AS CARDN (CARD READ ROUTINE) EXCEPT FUR THE FOLLOWING THINGS.

1. SUPPORTS ONLY ONE 1442.
2. ALLUWS ONLY TYPE 1 EXITS.
3. MUST RESIDE IN THE CALLING PROGRAM.
4. READS ONLY IN CARD IMAGE FURMAT.
5. STORAGE PRUTECTS 9 WURDS OF THE I/O LIST.
6. DOES NOT REMOVE PUNCH STOP BIT FROM I/U AREA AFTER A PUNCH OPERATIUN.

A MORE DETAILED DESCRIPTION UF EACH RUUTINE AND SUBRUUTINE, INCLUDING ENTRY AND EXIT POINTS, CALLED ROUTINES AND SUBRUUTINES AND POSSIBLE ERROR ABURT CONDITIONS, CAN BE FUUND IN THE PROGRAM LISTING PRECEDING EACH OF THE RUUTINES AND SUBROUTINES.

MPX SYSTEM INTERFACE

THE INTERFACE BETWEEN MPXDM AND THE MPX SYSTEM IS ESTABLISHED THRUUGH THE USE OF THE MPX FIXED AREA UF CURE. ALL MPX RUUTINES CALLED ARE VIA TRANSFER VECTURS IN THE FIXED AREA. ALSU ANY ADDRESS REQUIRED UR IOCC WORDS USED, ARE CUNTAINED IN THE FIXED AREA.

THE MPX RUUTINES USED ARE-

ROUTINE NAME	XFER VECTUR NAME
IUSET	$IUST
LDMUN	$EXIT
TYPEN	$TYPE
PRNTN	$PRNT

ROUTINE IOSET

THIS RODTINE IS CALLED TO OBTAIN THE AODRESS OF THE VARIABLE CORE BOSY WORD. THE BDSY WORD WILL BE INCREMENTED BY MPXDM WHENEVER THE DFT IS ABODT TO ISSDE AN XIO INSTROCTION, TO THE DEVICE ONDER TEST, WHICH WILL RESDLT IN AN INTERRDPT. INCREMENTING THE BUSY WORD PREVENTS MPXDM AND THE DFT FROM BEING SWAPPED TO DISK DDRING PENDING INTERRDPT CONOITIONS.

ROUTINE LDMON

LDMON IS THE PROGRAM WHICH LOADS THE MPX DATA PROCESSING MONITDR. WHEN MPXDM CALLS VIA $EXIT THE D.P. MONITOR IS LOADED TO OPERATE THE NEXT TIME SHARED JOB. THIS PROCEDORE CAOSES TERMINATION OF ON LINE DIAGNOSTICS.

ROOTINE TYPEN

THIS ROOTINE IS CALLED TO PRINT THE MPXOM AND DFT MESSAGES ON THE 1053 TYPEWRITER. THE OSE OF THE 1053 IS SPECIFIED BY THE C.E. ON THE FIRST MPXDM EDIT CARD.

ROUTINE PRNTN

THIS ROUTINE IS CALLED TO PRINT THE MPXDM ANO DFT MESSAGES ON THE 1443 PRINTER. THE USE OF THE 1443 IS SPECIFIED BY THE C.E. ON THE FIRST MPXOM EDIT CARD.

IN AODITION TO CALLING THE ABOVE ROUTINES VIA THE MPX FIXED AREA VECTORS, THE FOLLOWING FIXED AREA LOCATIONS ARE ALSO REFERENCED FOR THE REASONS STATED.

- LOCATIONS $UMK1 AND $OMK2 -

$OMK1 CONTAINS THE OSER MASK REGISTER FOR INTERROPT LEVELS 0 THRO 13 AND $OMK2 CONTAINS THE OSER MASK REGISTER FOR INTERROPT LEVELS 14 THRD 23. WHEN MPXOM HAS MASKED THE SYSTEM, IT WILL OSE THESE TWO IOCC WORDS TO PERFORM THE UNMASK FUNCTION.

- LOCATIONS $MK1 AND $MK1 -

THESE TWO LOCATIONS CONTAIN THE IOCC WORDS TO MASK INTERRUPT LEVELS 0 THRO 23. MPXOM WILL OSE THESE IOCC TO PERFORM A SYSTEM MASK OPERATION.

- LOCATION $IMIC -

THIS LOCATION CONTAINS THE ENTRY AODRESS TO THE MPX MASTER INTERRUPT CONTROL (MIC) ROOTINE, THROUGH WHICH ALL I/O INTERRUPT SERVICE SUB-ROOTINES RETORN TO MIC. WHEN MPXOM TRAPS THE INTERRUPTS FOR THE DEVICE ONDER TEST, IT WILL RETORN TO THE MPX SYSTEM VIA THIS LOCATION.

- LOCATION $CBAS -

THIS LOCATION IS OSED BY MPXDM TO PERFORM THE 'NO RESPONSE' TIME OUT OPERATION. MPXDM PLACES THE AODRESS AT ITS TMOOT ROOTINE IN THIS LOCATION TO START THE TIME OOT PROCESS. WHEN THE MPX SYSTEM DETECTS A NON-ZERO CONOITION IN $CBAS, IT WILL BRANCH TO THE AODRESS CONTAINED IN IT AT THE END OF EACH 2 SECOND TIME PERIOO. TO STOP THE TIME OUT PROCESS, MPXDM ZEROS LOCATION $CBAS.

- LOCATION $CEML -

THIS LOCATION CONTAINS THE MPXOM MODIFICATION LEVEL NOMBER. A SIMILAR NOMBER IS MAINTAINED WITHIN THE MPXDM PROGRAM. THE MODIFICATION NDMBERS MDST BE IDENTICAL IN BOTH MPX AND MPXDM TO ALLOW ON LINE DIAGNOSTIC OPERATION. ANY CHANGE TO THE MPX SYSTEM WHICH WODLD REQUIRE A CHANGE IN MPXDM RESDLTS IN A CHANGE OF THE MDOIFICATION NDMBER CONTAINED IN $CEML.

- LOCATION $TSLK -

$TSLK IS THE MPX TIME SHARE LOCK WORD. MPXDM WILL SET THIS WORD TO NON-ZERO WHEN IT DETECTS C.E. SWITCH 10 ON. THE OPERATION AND DSE OF THIS WORD IS EXPLANED IN THE OETAILED OESCRIPTION OF C.E. SWITCH 10 IN TABLE 1 SECTION 3.

- LOCATIONS $1443, $1442, $PAPT, $MATP, $AIIN, $OINP, $DAOP, $1627, $OKPH AND $TYPH -

THESE LOCATIONS COMPRISE THE MPX OEVICE TABLE ADDRESS TABLE. THE ADORESSES OF THE DEVICE TABLE FOR EACH OEVICE OEFINED IN THE MPX SYSTEM WILL APPEAR IN THAT OEVICES ASSIGNED LOCATION IN THE AOORESS TABLE. IF A DEVICE IS ONDEFINED, ITS DEVICE TABLE ADORESS WILL BE ZERO. MPXDM OSED THE OEVICE TABLE ADDRESS TABLE TO OETERMINE IF THE OEVICE TO BE TESTED IS DEFINED IN THE SYSTEM AND TO LOCATE ITS DEVICE TABLE.

LOCATION	DEVICE
$1443	1443 PRINTER
$1442	1442 CARD READ PONCH #1
$1442+1	1442 CARO REAO PONCH #2
$PAPT	1054/55 PAPER TAPE READER/PUNCH
$MATP	2400 MAGNETIC TAPE
$AIIN	ANALOG INPUT BASIC
$AIIN+1	ANALOG INPOT EXPANDER
$DINP	OIGITAL INPOTS
$DAOP	DIGITAL/ANALOG OOTPOTS
$OKPH	1810 PHYSICAL DRIVE 0
$OKPH+1	181D PHYSICAL ORIVE 1
$DKPH+2	181D PHYSICAL DRIVE 2
$TYPH	1053 PHYSICAL TYPEWRITER 1
$TYPH+1	1D53 PHYSICAL TYPEWRITER 2
$TYPH+2	1053 PHYSICAL TYPEWRITER 3
$TYPH+3	1D53 PHYSICAL TYPEWRITER 4
$TYPH+4	1053 PHYSICAL TYPEWRITER 5
$TYPH+5	1053 PHYSICAL TYPEWRITER 6
$TYPE+6	1D53 PHYSICAL TYPEWRITER 7
$TYPE+7	1053 PHYSICAL TYPEWRITER 8

- MPX DEVICE TABLES -

EACH DEVICE ON THE 1800 SYSTEM HAS IT'S OWN OEVICE TABLE. THE OEVICE TABLE CONTAINS ALL THE INFORMATION NEEDED TO SERVICE THE ASSOCIATED DEVICE. MPXDM USES THE OEVICE TABLES FOR THE FOLLOWING PURPOSES-

1. DETERMINES WHETHER THE DEVICE TO BE TESTED IS LOGICALLY ON OR OFF LINE BY CHECKING THE ON/OFF INDICATOR IN THE DEVICE TABLE
2. PLACES THE ADDRESS OF THE DMIR ROOTINE IN THE INTERROPT TRANSFER ADDRESS LOCATION OF THE OEVICE TABLE IN ORDER TO TRAP THE INTERRUPTS FROM THE DEVICE UNOER TEST.

TO OBTAIN A DETAILED DESCRIPTION OF THE 1800 MPX SYSTEM, REFERENCE SHOULD BE MADE TO THE APPROPRIATE MPX MANOALS.

5.2 SYSTEM PROTECTION

IN ORDER TO MAINTAIN A HIGH DEGREE OF PROTECTION AGAINST THE ON LINE DIAGNOSTICS AFFECTING THE OPERATING SYSTEM IN ANY WAY, MPXDM WAS DESIGNED WITH THE FOLLOWING PROTECTION FEATURES.

1. A MODIFICATION NUMBER IS MAINTAINED BY BOTH MPXDM AND THE MPX SYSTEM. THESE NUMBERS ARE COMPARED IMMEDIATELY AFTER MPXDM IS LOADED AND MUST BE IDENTICAL BEFORE MPXDM IS ALLOWED TO OPERATE. THIS NUMBER INSURES COMPATIBILITY BETWEEN THE TWO SYSTEMS.

2. AN ON LINE COMPATIBILITY INDICATOR HAS BEEN INCLUDED IN THE DFT'S. THIS INDICATOR IS SET TO A PREDETERMINED VALUE AT DFT ASSEMBLY, AND INDICATES TO MPXDM THAT THE DFT HAS BEEN MODIFIED AND TESTED FOR ON LINE OPERATION. THE DFT WILL NOT BE RUN IF THE COMPATIBILITY INDICATOR DOES NOT CONTAIN THE CORRECT VALUE.

3. AS A FURTHER CHECK OF THE ON LINE COMPATIBILTIY OF A DFT, MPXDM VERIFIES THAT THE OFF LINE INTERFACE VECTORS CAN BE SWAPPED WITH THEIR ON LINE COUNTER PARTS. THE TRANSFER VECTORS ARE FLAGGED BY A SPECIFIC COMBINATION OF BITS IN THE RELOCATION FIELD OF EACH DFT OBJECT CARD. IN ORDER TO FLAG THESE VECTORS, THE DFT MUST BE ASSEMBLED WITH AN ASSEMBLER OPTION PROVIDED FOR THIS PURPOSE. A DFT ASSEMBLED WITHOUT THIS OPTION CANNOT BE RUN ON LINE.

4. MPXDM WILL ALLOW ONLY 1 DEVICE AT A TIME TO BE REQUESTED FOR TEST. TRYING TO RUN MORE THAN 1 DEVICE RESULTS IN A DFT ABORT. OVERLAP OPERATION OF MORE THAN 1 DFT IS ALSO NOT ALLOWED DURING ON LINE OPERATION.

5. THE DEVICE BEING REQUESTED FOR TEST MUST BE DEFINED IN THE MPX SYSTEM.

6. IF THE DFT WAS NOT MODIFIED TO SHARE A DEVICE WITH THE MPX SYSTEM (AS AIDPC WAS),THEN THAT DEVICE MUST BE LOGICALLY OFF LINE IN ORDER TO BE TESTED.

7. THE INTERRUPT LEVEL TO WHICH THE TESTED DEVICE IS ASSIGNED MUST BE UNMASKED.

8. A 'NO RESPONSE' TIME OUT ROUTINE IS PROVIDED TO PREVENT VARIABLE CORE FROM BEING 'TIED UP' DO TO A LOST INTERRUPT FROM THE TESTED DEVICE.

9. MPXDM USED THE MPX PRINT ROUTINES FOR MESSAGE OUTPUT IN ORDER TO AVOID OUTPUT DEVICE CONFLICTS.

10. MPXDM TRAPS ONLY THOSE INTERRUPTS GENERATED BY THE DEVICE UNDER TEST.

11. WHILE ON LINE, THE DFT IS NOT ALLOWED TO PERFORM ANY OPERATION WHICH REQUIRES PROTECTING STORAGE OR WHICH WOULD RESULT IN AN INTERNAL LEVEL INTERRUPT.

12. THE DFT IS ABORTED ON ANY DETECTED ERROR OTHER THAN THOSE GENERATED BY THE DEVICE UNDER TEST.

13. MPXDM IS ABORTED ON ANY LOGIC ERROR DETECTED WITHIN ITSELF.

5.3 MPXDM SERVICE AIDS

THE FOLLOWING PROGRAM SERVICE AIDS HAVE BEEN INCORPORATED INTO MPXDM.

1. PRIOR TO BRANCHING TO THE DFT, MPXDM STORES THE LOCATION OF THE BRANCH IN THE DFT BRANCH WORD DFTOP, LOCATION FFFD HEX.

2. PRIOR TO BRANCHING TO THE MPX SYSTEM, MPXDM STORES THE LOCATION OF THE BRANCH IN THE MPX BRANCH WORD MPXOP, LOCATION FFFE HEX.

3. ON A RETURN TO MPXDM FROM EITHER MPX OR THE DFT, THE APPROPRIATE BRANCH WORD, MPXOP OR DFTOP, WILL BE SET TO ZERO.

4. A LOADER CHECK WORD IS MAINTAINED IN ALL 3 MPXDM LOADERS. PRIOR TO BRANCHING TO A LOADER, MPXDM STORES THE ID OF THE LOADER IT INTENDS TO CALL IN LOCATION LCLID, FFD9 HEX. WHEN A LOADER IS ENTERED, IT COMPARES ITS OWN CHECK WORD AGAINST THE CONTENTS OF LCLID, AND ABORTS IF THEY DO NOT COMPARE.

LOADER NAME	LOADER CHECK WORD
MPDM1	1001 HEX
MPDM2	2002 HEX
MPDM4	4004 HEX

5. A STATUS WORD (STAT LOCATION FFFD HEX) IS MAINTAINED FOR THE DFT INTERFACE ROUTINES. EACH TIME ONE OF THE SEVEN ROUTINES IS ENTERED, ITS ASSIGNED BIT IS TURNED ON. PRIOR TO EXITING FROM THE ROUTINE, THE ASSIGNED BIT IS TURNED OFF.

STATUS WORD	ROUTINE	XFER VECTOR
BIT 0	RQDV	REQDV
BIT 1	RLDV	RELDV
BIT 2	ERR	ERROR
BIT 3	LG	LOG
BIT 4	MEND	END
BIT 5	BGIN	BEGIN
BIT 6	STRT	START

5.4 PATCHING ON-LINE DIAGNOSTIC TESTS

ON-LINE COMPATIBLE DIAGNOSTICS CAN BE PATCHED IN THE SAME MANNER AS 'OFF-LINE ONLY' DIAGNOSTICS. CARE,HOWEVER,MUST BE TAKEN WHEN PATCHING AN ON-LINE COMPATIBLE DFT,ESPECIALLY WHEN A DIAGNOSTIC MONITOR INTERFACE TRANSFER VECTOR IS INVOLVED.

THE INTERFACE TRANSFER VECTORS ARE,-BEGIN,START,LOG,ERROR,REQDV,RELDV AND END-. THE ABSOLUTE VALUE OF THE TRANSFER VECTORS IS DIFFERENT BETWEEN ON AND OFF LINE OPERATION (THE ON-LINE MONITOR MAKES THE NECESSARY CHANGING). BECAUSE OF THIS DIFFERENCE,ANY PATCH INVOLVING THE TRANSFER VECTORS WILL REQUIRE 2 SETS OF PATCH CARDS. ONE SET FOR OFF-LINE OPERATION,IN WHICH THE ABSOLUTE VALUE OF THE TRANSFER VECTOR IS AS SHOWN IN THE DFT LISTING,AND ONE SET FOR ON-LINE OPERATION IN WHICH THE ABSOLUTE VALUE OF THE TRANSFER VECTOR IS AS FOLLOWS.

BEGIN = /FFF5 , START = /FFF6 , END = /FFF7 , LOG = /FFF8
ERROR = /FFF9 , REQDV = /FFFA , RELDV = /FFFB

ALL PATCHES FOR ON-LINE OPERATION MUST BE CONTAINED WITHIN THE DFT OVERLAY AREA OF THE ON-LINE DIAGNOSTIC MONITOR. THIS AREA IS 2321 DEC WORDS LONG,THEREFORE THE HIGHEST HEX ADDRESS WHICH THE ON-LINE DIAGNOSTIC MONITOR WILL ALLOW IS /1110 (DFT ORG ADDRESS 2047 + 2321 WORDS = 4368 = HEX 1110).

A DESCRIPTION OF THE PATCH CARD FORMAT CAN BE FOUND IN THE DESCRIPTION FOR THE OFF-LINE MONITOR,(0801),SECTION 5.5,SERVICE HINTS

6. APPENDIX

6.1 C.E. CORELOAD PROGRAM

THIS PROGRAM IS AN MPX SYSTEM PROGRAM. IT'S DESCRIPTION AND OPERATING PROCEDURE IS REPRODUCED HERE FOR THE CONVENIENCE OF THE C.E.

THE C.E. CORELOAD PROGRAM PROVIDES THE ABILITY TO INTERROGATE AND MODIFY THE STATUS OF I/O DEVICES ON THE SYSTEM. THE FUNCTIONS PROVIDED ARE.

1. SET ON/OFF LINE STATUS.
2. RESET HARDWARE COUNT
3. SET LOGICAL AND PHYSICAL UNIT ASSIGNMENTS
4. SET LIST AND SYSTEM PRINTER ASSIGNMENTS
5. INTERROGATE AND RESET EXECUTIVE DIRECTOR ERROR COUNTS.

ERROR PROCEDURES

IF THE PRINCIPAL 1053 AND ALL ITS BACKUP UNITS ARE OFF-LINE, EACH ATTEMPT BY THE C.E. CORE LOAD TO TYPE A MESSAGE WILL CAUSE A WAIT WITH A UNIQUE DISPLAY IN THE 'A'-REGISTER. THESE WAITS AND THEIR ASSOCIATED MESSAGES ARE AS FOLLOWS.

-MESSAGE-	-'A'-REGISTER-
(TYPEOUT OF C.E. SWITCH SETTINGS)	/F002
C.E. CORELOAD	/F003
SET FUNC IN C.E. SWITCHES	/F004
DEVC OR UNIT NOT ON SYST	/F005
INVALID DEVICE CODE	/F006
INVALID DEVICE FOR SWITCH	/F007
NO DEVICE SELECTED	/F008
TURN ALL SWITCHES OFF TO EXIT	/F009
(EXECUTIVE DIRECTOR ERROR COUNT)	/F010
OFF LINE SYST-FUNC IGNORED	/F013
(STATUS LINE FOR DEVICE UNIT)	/0001
(LIST AND SYSTEM PRINTER STATUS)	/000C

/F001 IS DISPLAYED WHEN A VALUE IS TO BE SET IN THE C.E.SWITCHES (FOLLOWING SET FUNC IN C.E. SWITCHES,ETC).

OPERATING PROCEDURES

THE C.E. CORELOAD WILL BE QUEUED FOR EXECUTION TO A USER SPECIFIED AREA BY THE OCCURANCE OF A C.E. INTERRUPT.

THE C.E. SENSE SWITCHES ARE USED TO SPECIFY THE FUNCTIONS TO BE PERFORMED BY THE PROGRAM. THE PROGRAM WILL INITIALLY HALT TO ALLOW A FUNCTION TO BE SET IN THE SWITCHES. PUSHING START INITIATES THE FUNCTION. AFTER EACH FUNCTION IS PERFORMED, THE PROGRAM HALTS TO ALLOW SPECIFYING ANOTHER FUNCTION.

*** NOTE ***....REFER TO SECTION 6.5.6 OR 6.5.7 FOR PROCEDURE TO PUT A 2790 LOOP ADAPTER ON-LINE OR OFF-LINE.

FUNCTIONS

SELECT DEVICE

C. E. SWITCHES- 0010 XXXX

WHERE- XXXX IS THE DEVICE CODE AS FOLLOWS.

0001B	2310 DISK
0001	1053/1816 TYPEWRITER
0010	1443 PRINTER
0011	1442 CARD READER/PUNCH
0100	2401 MAGNETIC TAPE
0101	AI - BASIC
0110	AI - EXPANDER
0111	1054
1000	1055
1001	DI
1010	DAQ
1011	1627 PLOTTER

THE FOLLOWING ITEMS WILL BE TYPED FOR EACH LOGICAL UNIT OF THE DEVICE TYPE SPECIFIED.

1. LOGICAL UNIT NUMBER
2. PHYSICAL UNIT IDENTIFICATION
3. ON/OFF LINE STATUS
4. HARDWARE ERROR COUNT

EXAMPLE OF TYPED OUTPUT.

```
1   TYPE01   ON/OFF   0000
.     .        .       .    ...HARDWARE ERROR COUNT
.     .        .            .
.     .        .            ...ON/OFF LINE STATUS
.     .        .
.     .        ...PHYSICAL UNIT IDENTIFICATION
.     .
...LOGICAL UNIT NUMBER
```

THIS FUNCTION MUST BE THE FIRST ONE SPECIFIED. IT SELECTS THE DEVICE OR DEVICE TYPE TO BE AFFECTED BY THE FOLLOWING FUNCTION.

SET ON/OFF LINE STATUS

C. E. SWITCHES- 010X 0YYY

WHERE.

X = 0, TAKE UNIT OFF-LINE. 1, PUT UNIT ON-LINE.
YYY = LOGICAL UNIT NUMBER OF DEVICE **NOTE 1**

RESET ERROR COUNT

C. E. SWITCHES- 0110 0YYY

WHERE.

YYY = LOGICAL UNIT NUMBER OF DEVICE **NOTE 1**

SWITCH LOGICAL UNIT ASSIGNMENTS

(VALID ONLY FOR 1810 OR 1053)

C. E. SWITCHES- 11 XXX YYY

WHERE-

XXX = THE PHYSICAL DEVICE NUMBER TO BE ASSIGNED TO LOGICAL CODE YYY

YYY = THE LOGICAL UNIT NUMBER TO BE ASSIGNED TO PHYSICAL DEVICE XXX **NOTE 1**

THE ABOVE THREE FUNCTIONS WILL TYPE OUT A STATUS LINE FOR THE LOGICAL UNIT SPECIFIED.

NOTE 1 IF THE DEVICE TYPE IS THE 1053, THE LOGICAL UNIT NUMBER SPECIFIED IS ONE LESS THAN THE ACTUAL LOGICAL UNIT NUMBER.

SET LIST AND SYSTEM PRINTER ASSIGNMENT

C. E. SWITCHES- 100Y X000

WHERE- Y = 0 IF LIST PRINTER IS TO BE SET.
Y = 1 IF SYSTEM PRINTER IS TO BE SET

X = 0 IF PRINTER IS THE 1053
X = 1 IF THE PRINTER IS THE 1443

THE LIST AND SYSTEM PRINTER ASSIGNEMENTS ARE TYPED OUT FOR THE FUNCTION.

EXIT FROM CORELOAD

C. E. SWITCHES- 0000 0000

THIS CAUSES A CALL EXIT TO BE PERFORMED.(TERMINATE C.E. CORELOAD)

INTERROGATE AND RESET EXECUTIVE ERROR COUNTS

C. E. SWITCHES- 1010 000X

WHERE- X = 0 MEANS TO TYPE OUT EXECUTIVE ERROR COUNTS.
X = 1 MEANS TO RESET ALL ERROR COUNTS.

THE ERROR COUNTS ARE NOT TYPED OUT FOR THE RESET FUNCTION.

EXAMPLES OF USE

THE FOLLOWING IS THE TYPEWRITER OUTPUT FOR A C.E. CORELOAD APPLICATION WHICH-

1. TAKES THE 1443 OFF-LINE (1)
2. SWITCHES LOGICAL 1053 UNITS 1 AND 2 (2)
3. MAKES THE LIST PRINTER THE 1053 (3)

```
SET FUNC IN C.E. SWITCHES 00100010  (1)
    0  PT1443   ON  0007
SET FUNC IN C.E. SWITCHES 01000000  (1)
    0  PT1443   OFF  0007
SET FUNC IN C.E. SWITCHES 00100001  (2)
    1  TYPE01   ON 0003
    2  TYPE02   ON 0000
    3  TYPE03  OFF 0000
SET FUNC IN C.E. SWITCHES 11001000  (2)
    1  TYPE02   ON 0000
SET FUNC IN C.E. SWITCHES 11000001  (2)
    2  TYPE01   ON 0003
SET FUNC IN C.E. SWITCHES 10000000  (3)
    LIST PRINTER = 1053
    SYSTEM PRINTER = 1053

SET FUNC IN C.E. SWITCHES 00000000
                 (RETURN TO B.P. MONITOR)
```

6.2 MPX CONTROL CARD FORMAT

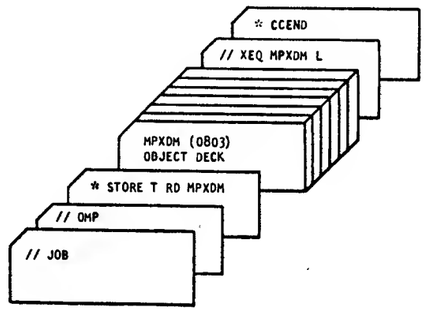
1. NORMAL LOAD FROM 1442

   PUNCH THE MPX CONTROL CARDS AS SHOWN BELOW:

```
CARD COLUMN - 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
              / /    J O B
              / /    D M P
              * S T O R E              T     R D                    M P X O M
              / /    X E Q    M P X O M       L
              * C C E N O
```

AN EXPLANATION OF THE CONTENTS OF EACH CARD CAN BE FOUND IN THE 1800 MPX USERS GUIDE.

PLACE THE CONTROL CARDS JUST PUNCHED IN FRONT OF AND BEHIND THE MPXDM OBJECT DECK AS SHOWN BELOW.



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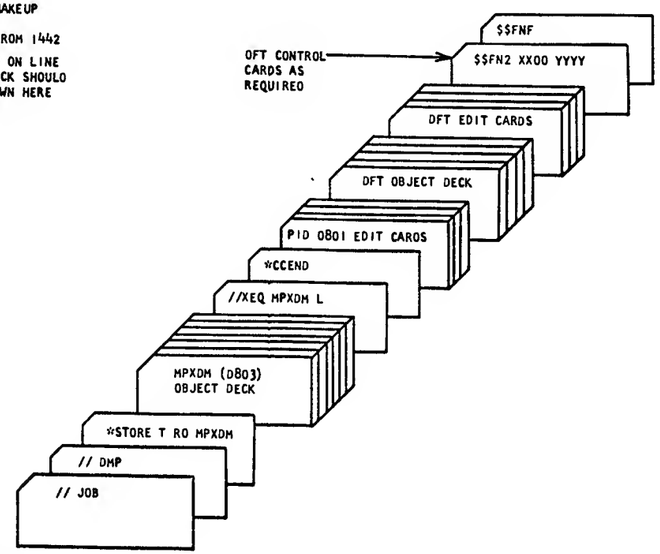
6.3 DIAGNOSTIC DECK MAKEUP

1. NORMAL LOAD FROM 1442

   THE COMPLETED ON LINE DIAGNOSTIC DECK SHOULD APPEAR AS SHOWN HERE



6.4 DFT CONTROL CARD FORMAT

DFT CONTROL CARDS ARE USED TO COMMUNICATE WITH THE DFT DURING ON-LINE OPERATION. THE INFORMATION WHICH MAY BE COMMUNCIATED TO THE DFT VIA THE CONTROL CARDS, IS THE SAME INFORMATION WHICH MAY BE COMMONICATED TO THE DFT OFF LINE VIA THE SENSE/PROGRAM AND DATA ENTERY SWITCHES.

REFER TO THE PROGRAM DESCRIPTION, FOR THE DESIRED PID, FOR AVAILABLE OPTIONS AND TO THE APPENDIX SECTION 6.1 OF THIS DOCOMENT FOR ANY SPECIAL OPTIONS WHICH MAY BE AVAILABLE TO ON LINE OPERATION.

THE CONTROL CARDS SHOULD BE PONCHED AS SHOWN BELOW. THE LAST CARD OF THE CONTROL CARD DECK MOST BE AN 'END CONTROL CARD'.

CARD COLOMN -- 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

DATA CARDS	$	$	F	N	X		Y	Y	O	D		Z	Z	Z	Z			COMMENTS
END CONTROL CARD	$	$	F	N	F													IF DESIRED

THE 'X' (COLOMN 5) IS THE SWITCH FONCTION INTO WHICH THE DATA IN COLOMNS 12 THRO 15 IS TO BE STORED. THE FONCTION NOMBERS ARE 0, 1, 2 OR 3. IN THE OFF LINE SYSTEM, THE FONCTION IS THE ENTRY IN S/P SWITCHES 0 AND 1.

THE 'YY' (COLOMNS 7 AND 8) IS THE PID OF THE DFT FOR WHICH THE CONTROL CARD IS INTENDED. IN THE OFF LINE SYSTEM, THE PID IS THE ENTRY IN S/P SWITCHES 2 THRO 7.

THE 'ZZZZ' (COLUMNS 12-15) IS THE DATA WHICH IS TO BE ENTERED IN THE DFT SWITCH FONCTION SPECIFIED IN COLOMN 5. THE DATA PONCHED IS THE HEXIDECIMAL (OR DECIMAL) REPRESENTATION OF THAT INFORMATION WHICH IS NORMALLY ENTERED IN THE DATA ENTRY SWITCHES DORING OFF LINE DIAGNOSTIC OPERATION.

6.5 DFT ON LINE OPERATION

1. GENERAL

FOR THE MOST PART, THE OPERATION OF THE DFT'S ON LINE IS IDENTICAL TO THE OPERATION OF THE DFT'S OFF LINE. THE MAJOR DIFFERENCES ARE THAT ONLY 1 DFT AT A TIME MAY BE RON, ONLY 1 DEVICE AT A TIME MAY BE TESTED BY ANY DFT AND THAT THE DFT'S WILL BE RUN IN THE LOOP PROGRAM MODE. THE LOOP PROGRAM FONCTION IS ESTABLISHED BY MPXOM WITHOOT THE REQUIREMENT OF AN OPTION SELECTION.

WITHIN THE DFT ITSELF, ANY OPERATION WHICH WOULD NORMALLY RESOLT IN AN INTERNAL LEVEL INTERROPT, OR ANY OPERATION WHICH REQOIRES STORAGE PROTECTING CORE, IS BYPASSED. THIS RESTRICTION IS MADE SINCE THE MPX SYSTEM HANDLES ALL INTERNAL INTERROPTS AND WOULD NORMALLY PERFORM A RESTART OPON RECEIPT OF SUCH INTERROPT. ALSO, SINCE THE DIAGNOSTIC SYSTEM CAN BE SWAPPED FROM CORE OR ABORTED AT ANY TIME, STORAGE PROTECTING IS BYPASSED TO PREVENT THE POSSIBILITY OF LEAVING A CORE LOCATION PROTECTED.

THE MESSAGES WHICH THE DFT OOTPUTS ON LINE ARE IDENTICAL TO THOSE IT OUTPOTS OFF LINE, EXCEPT THAT WHEN ON LINE,THE DIAGNOSTIC MONITOR FORCES THE HEADING 'CUST ENG' IN FRONT OF EACH MESSAGE. TO INSURE THAT THE C.E. RECEIVES ALL MESSAGES, DEVICE BACKOP EXISTS WITHIN THE DIAG. MONITOR. WHEN MPXDM OSES THE TYPEN ROUTINE.FOR PRINTING, 1053 BACKOP IS PROVIDED THROOGH THE MPX SYSTEM. IF THE C.E. EDITS THE 1443 AS THE OUTPOT DEVICE AND THE 1443 AS UNAVAILABLE, MPXDM WILL FORCE THE USE OF THE 1053. ALSO IF THE 1443 IS BEING USED BY MPXDM, AND FOR SOME REASON BECOMES NOT READY, MPXDM WILL BACK OP TO THE 1053. WHEN THE 1443 BECOMES READY AGAIN, MPXDM WILL RESOME OSING IT.

COMMONICATION WITH THE DFT, WHILE ON LINE, IS VIA THE DFT CONTROL CARDS RATHER THAN VIA THE SENSE/PROGRAM AND DATA ENTRY SWITCHES. THOSE OPTIONS MADE AVAILABLE BY THE DFT OFF LINE ARE ALSO AVAILABLE WHILE ON LINE.

THE INFORMATION FOR DEVICE SET OP, AVAILABLE OPTIONS, ROOTINE DESCRIPTION,ETC. IS CONTAINED IN THE PROGRAM DESCRIPTION ASSOCIATED WITH THE DFT. THE C.E. SHOULD FAMILIARIZE HIMSELF WITH THE CONTENTS OF THAT DOCUMENT AND ALSO READ THE PARTICULAR DESCRIPTION, SECTION 6.5.X WHICH FOLLOWS, FOR THE DFT TO BE RON, PRIOR TO OPERATING THE ON LINE DIAGNOSTIC SYSTEM.

THE DESCRIPTION FOR THE DFT'S WHICH FOLLOWS, DESCRIBES THE ON/OFF LINE DIFFERENCES FOR EACH DFT AND ANY NECESSARY CONSIDERATIONS OR OPERATIONS WHICH MOST BE TAKEN INTO ACCOUNT IN ORDER TO OPERATE THE DFT ON LINE.

2. PIO 0806 - 1053/1816 FONCTION TEST.

1. ONLY ONE TYPEWRITER (1053 OR 1816) AT A TIME MAY BE SELECTEO FOR TEST.

   WHEN SELECTING TYPEWRITERS,IT SHOULO BE REMEMBEREO THAT TYPEWRITER O IS THAT TYPEWRITER WHICH IS ASSIGNED AS THE MONITOR LOGGING OEVICE (THE TYPEWRITER WHOSE OOEF IS PUNCHEO IN THE MON.LOG OEVICE ENTRY ON THE OFT EOIT CARO).

   FOR EXAMPLE,IF TYPEWRITER 3 IS ASSIGNED AS THE MONITOR LOGGING OEVICE,IT BECOMES TYPEWRITER O ANO MUST BE SELECTEO AS SUCH. FURTHER,IN TERMS OF SELECTION,TYPEWRITER 3 NO LONGER EXISTS (ITS NORMAL ENTRY POSITION ON THE OFT EOIT CARO WOULO BE PONCHEO 0000).

   IF NO TYPEWRITER IS ASSIGNED AS THE MONITOR LOGGING OEVICE, THEN TYPEWRITER O OOES NOT EXIST.

   THE HEX VALUES TO BE PUNCHEO IN THE OFT CONTROL CARO FOR FONCTION 2,ANO THE TYPEWRITER EACH SELECTS,ARE AS FOLLOWS.

/8000	TYPEWRITER O (MONITOR LOGGING OEVICE)
/4000	TYPEWRITER I
/2000	TYPEWRITER 2
/1000	TYPEWRITER 3
/0800	TYPEWRITER 4
/0400	TYPEWRITER 5
/0200	TYPEWRITER 6
/0100	TYPEWRITER 7
/0080	TYPEWRITER 8

2. THE TYPEWRITER TO BE TESTED MUST BE LOGICALLY OFF LINE.

3. IF THE OPERATOR OOES NOT SPECIFY (VIA A OFT CONTROL CARO AT LOAO TIME) A TYPEWRITE FOR TEST, THEN THE OFT SELECTS THE TYPEWRITER WHICH IS DEFINED BY THE 1ST OOEF IN THE OFT EDIT CARO.

4. THE TYPEWRITER BEING TESTEO WILL BE OEFINEO AS TYPEWRITER 0000 IN ALL OFT MESSAGES.

5. THE FOLLOWING FONCTIONS/ROUTINES ARE BYPASSED WHILE OPERATING ON LINE.

   A. ROUTINE 12-KEYBOARO TEST. ONLY THE PRINTER FUNCTION OF AN I816 CAN BE RUN ON LINE.

   B. THE OPERATOR SHOULO NOT OEPRESS THE KEYBOARO REQUEST KEY WHILE TESTING THE PRINTER FUNCTION OF AN I816. SINCE THE OFT CAN BE SWAPPED BETWEEN DISK ANO CORE DURING MPX TIME SHARE OPERATION, IT MAY NOT BE IN CORE AT THE TIME THE KEYBOARO REQUEST KEY IS DEPRESSED.

6. OTHER THAN AS MENTIONED ABOVE, THE 1053/I816 FUNCTION TEST OPERATES IN THE SAME MANNER AS IT OOES OFF LINE. REFER TO THE OFT PROGRAM OESCRIPTION FOR A DEFINITION OF ALL OFT PRINTOUTS.

3. PIO 0809 - I810 A/B FONCTION TEST

```
*************************************************************************
*                                                                       *
* IN ORDER TO TEST THE 1810 DISK ORIVES ON-LINE, THE FOLLOWING          *
* ITEMS MUST BE CONSIDERED ANO VERIFIEO WITH THE COSTOMER.              *
*                                                                       *
*     A.  CAN THE COSTOMER PROCESS BE MAINTAINED IF THE OISK ORIVE      *
*         IN QOESTION IS TAKEN OFF LINE                                 *
*                                                                       *
*     B.  SINCE THE ON LINE DIAGNOSTIC MONITOR OPERATES AS A BATCH      *
*         JOB, THE TIME SHARING FEATURE OF THE MPX SYSTEM MUST          *
*         STILL BE AVAILABLE AFTER THE 1810 OISK DRIVE TO BE            *
*         TESTEO IS TAKEN OFF LINE.                                     *
*                                                                       *
*     C.  THE C.E. CORELOAD MOST STILL BE AVAILABLE TO POT THE          *
*         1810 OISK DRIVE BACK ON LINE FOLLOWING TEST COMPLETION.       *
*                                                                       *
* BECAUSE OF THE ABOVE REQUIREMENTS, THE ABILITY TO TEST THE 1810       *
* DISK DRIVES ON-LINE IS DEPENOENT UPON THE CONFIGORATION OF THE        *
* CUSTOMERS MPX SYSTEM. THE C.E. SHOULO OISCUSS FULLY THESE             *
* REQOIREMENTS, AND ANY POSSIBLE CONSEQOENCES, WITH THE CUSTOMER.       *
* IF ANY OF THE REQUIREMENTS STATED IN ITEMS A,B AND C ABOVE            *
* CANNOT BE MET, THEN THE RONNING OF THE 1810 A/B DISK FUNCTION         *
* TEST ON LINE SHOULO NOT BE ATTEMPTED.                                 *
*                                                                       *
*************************************************************************
```

1. ONLY 1 DISK DRIVE AT A TIME MAY BE OPERATED ON LINE.

2. THE DISK ORIVE TO BE TESTED MUST BE LOGICALLY OFF LINE, AND THE C.E. DISK PACK MOUNTED ON IT.

NOTE

IN MANY CASES IT WILL BE NECESSARY FOR THE CUSTOMER TO CHANGE LOGICAL OISK ORIVE ASSIGNMENTS AND SWAP DISK PACKS IN ORDER TO 'FREE' THE DISK DRIVE TO BE TESTED. TO ACCOMPLISH THE 'CHANGE',A STRICT PROCEOURE MUST BE FOLLOWEO,AND MUST BE PERFORMEO PRIOR TO LOAOING THE 1810 A/B OIAGNOSTIC TEST.

THE FOLLOWING EXAMPLE IS PROVIDED AS A GUIDE TO PERFORMING THE 'CHANGE' PROCEOURE. IN ALL CASES THE CUSTOMER SHOULD BE FULLY AWARE OF THE OPERATIONS TO BE PERFORMED.

ASSOME THAT THE CUSTOMER DISK DRIVE ASSIGNMENTS ARE.

PHYSICAL DISK DRIVE 0 = LOGICAL ORIVE 0
PHYSICAL DISK DRIVE 1 = LOGICAL ORIVE 1
PHYSICAL OISK DRIVE 2 = LOGICAL DRIVE 2

AND THAT LOGICAL DRIVES O ANO 1 ARE REQOIRED IN THE OPERATION OF THE SYSTEM. FURTHER,ASSUME THAT PHYSICAL DRIVE 1(LOGICAL 1) IS THE DRIVE CAUSING ERRORS AND REQOIRES TESTING. SINCE LOGICAL ORIVE 1 IS REQOIRED BY THE SYSTEM,IT WILL BE NECESSARY TO REASSIGN IT AND TRANSFER THE DISK PACK TO THE REASSIGNEO DRIVE. THE FONCTIONS TO BE PERFORMED,THEREFORE,ARE TO ASSIGN PHYSICAL ORIVE 2 AS LOGICAL DRIVE I,ASSIGN PHYSICAL DRIVE 1 AS LOGICAL ORIVE 2,MOVE THE CUSTOMER PACK FROM PHYSICAL DRIVE 1 TO PHYSICAL DRIVE 2 (NOW LOGICAL I),PLACE THE C.E. PACK ON PHYSICAL DRIVE 1 (NOW LOGICAL 2) ANO LEAVE PHYSICAL ORIVE 1 OFF LINE.

THE STEPS REQUIRED TO ACCOMPLISH THE ABOVE FUNCTIONS ARE.

1. CALL THE C.E. CORE LOAD INTO CORE AND.
   A. TAKE LOGICAL DISK DRIVES 1 AND 2 OFF LINE.
   B. ASSIGN PHYSICAL DRIVE 1 AS LOGICAL DRIVE 2.
   C. ASSIGN PHYSICAL DRIVE 2 AS LOGICAL DRIVE 1.
2. DROP POWER TO PHYSICAL DRIVES 1 AND 2.
3. REMOVE THE DISK PACK FROM PHYSICAL DRIVE 1 AND PLACE IT ON PHYSICAL DRIVE 2.
4. PLACE THE C.E. PACK ON PHYSICAL DRIVE 1.
5. POWER BOTH DISK DRIVES BACK UP.
6. USING THE C.E. CORE LOAD.
   A. PLACE LOGICAL DRIVE 1(PHYSICAL 2) BACK ON LINE.

THE DRIVES ARE NOW REASSIGNED AND PHYSICAL DRIVE 1 IS OFF LINE AND AVAILABLE FOR TESTING. THE 2310 A/C DIAGNOSTIC CAN NOW BE LOADED TO TEST THE DRIVE,A DFT CONTROL CARD BEING USED TO SELECT PHYSICAL DRIVE 1.

--UNDER NO CIRCUMSTANCES SHOULD THE CHANGING OF LOGICAL DISK DRIVE ASSIGNMENTS BE ATTEMPTED WHILE THE 2310 A/C DIAGNOSTIC IS IN CORE.--

WHEN TESTING HAS BEEN COMPLETED AND IT IS DESIRED TO RESTORE THE THE DISK DRIVES TO THEIR ORIGINAL ASSIGNMENTS,THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.

1. TERMINATE ON LINE DIAGNOSTICS BY FOLLOWING THE TERMINATION PROCEDURE IN SECTION 3.4.
2. USING THE C.E. CORE LOAD.
   A. TAKE LOGICAL DRIVES 1 AND 2 OFF LINE.
   B. ASSIGN PHYSICAL DRIVE 1 AS LOGICAL DRIVE 1.
   C. ASSIGN PHYSICAL DRIVE 2 AS LOGICAL DRIVE 2.
3. DROP POWER TO PHYSICAL DRIVES 1 AND 2.
4. REMOVE THE C.E. DISK PACK FROM PHYSICAL DRIVE 1.
5. REMOVE THE CUSTOMER PACK FROM PHYSICAL DRIVE 2 AND PLACE IT ON PHYSICAL DRIVE 1.
6. POWER BOTH DISK DRIVES BACK UP.
7. USING THE C.E. CORE LOAD.
   A. PLACE LOGICAL DRIVES 1 AND 2 ON LINE.

---

3. IF THE OPERATOR DOES NOT SPECIFY (VIA A DFT CONTROL CARD AT LOAD TIME) A DISK DRIVE FOR TEST, THEN THE DFT SELECTS THE DISK DRIVE WHICH IS DEFINED BY THE 1ST UDEF IN THE DFT EDIT CARD.

4. THE FOLLOWING FUNCTIONS/ROUTINES ARE BYPASSED WHILE OPERATING ON LINE.

   A. THE SEQUENTIAL SECTOR CHECK IN THE PRE-CONTROL ROUTINE.

   B. THE C.E. MODE CHECK IN ROUTINE 1.

   C. ROUTINE 2 - STORAGE PROTECT CHECK.

5. OTHER THAN AS MENTIONED ABOVE, THE 1810 A/B FUNCTION TEST OPERATES IN THE SAME MANNER AS IT DOES OFF LINE. REFER TO THE DFT PROGRAM DESCRIPTION FOR A DEFINITION OF ALL DFT PRINTOUTS.

4. PID 0B0A - 1443 FUNCTION TEST

   1. THE 1443 PRINTER MUST BE LOGICALLY OFF LINE.

      THERE IS NO NEED TO CHANGE THE DIAGNOSTIC MONITOR EDIT CARD,ED00,IF THE 1443 HAS BEEN DESIGNATED AS THE MONITOR LOGGING DEVICE. THE MONITOR WILL RECOGNIZE THE FACT THAT THE 1443 IS LOGICALLY OFF LINE AND AUTOMATICALLY SELECT THE TYPEWRITER (AT LEAST ONE TYPEWRITER IS REQUIRED BY MPX) AS THE OUTPUT DEVICE.

   2. THE 1443 DFT OPERATES ON LINE IN THE SAME MANNER AS OFF LINE. NO ROUTINES OR FUNCTIONS ARE BYPASSED.

   3. REFER TO THE DFT PROGRAM DESCRIPTION FOR A DEFINITION OF ALL DFT PRINTOUTS.

5. PID 0823 - AI-DPC FUNCTION TEST

   1. EITHER AI BASIC OR AI EXPANDER MAY BE TESTED ON LINE. THE DEVICE TO BE TESTED IS DEFINED BY THE DDEF IN THE AIDPC EDIT CARDS.

   2. AI MAY BE EITHER LOGICALLY OFF LINE OR LOGICALLY ON LINE DURING TESTING.

      ****
      NOTE
      ****

      DO NOT CHANGE THE ON-OFF LINE STATUS OF AI AFTER THE AIDPC PROGRAM HAS BEEN LOADED. IF IT IS DESIRED TO SWITCH AI FROM ON-LINE TO OFF-LINE,OR FROM OFF-LINE TO ON-LINE STATUS,FIRST ABORT ON-LINE DIAGNOSTICS BY FOLLOWING THE PROGRAM TERMINATION PROCEDURE,SECTION 3.4. THE C.E. CORELOAD MAY THEN BE CALLED TO PERFORM THE DESIRED STATUS CHANGE.

   3. AI-OPC MESSAGES WHICH OCCUR WHILE RUNNING AI IN THE LOGICAL OFF LINE MODE ARE DEFINED IN THE DESCRIPTION FOR PROGRAM 0823 AIDPC FUNCTION TEST. AI-OPC MESSAGES WHICH OCCUR WHILE RUNNING AI IN THE LOGICAL ON LINE MODE,CAN BE FOUND IN THIS DOCUMENT UNDER THE HEADING *AI LOGICALLY ON LINE*, PARAGRAPH B.,PRINTOUTS.

AI LOGICALLY OFF LINE

   1. IF AI IS LOGICALLY OFF LINE, THEN THE AIDPC PROGRAM WILL OPERATE IN THE SAME MANNER AS IT DOES OFF LINE WITH THE EXCEPTION THAT PROGRAM TIMING RATHER THAN A HARDWARE TIMER WILL BE USED TO TIME A.I. OPERATIONS.

   2. THE AI POINTS (SOLID STATE OR RELAY) TO BE TESTED AS WELL AS THE RANGE, DIGITS CYCLES, ETC. ARE DEFINED IN THE AIDPC EDIT CARDS. REFER TO THE AIDPC PROGRAM DESCRIPTION, APPENDIX SECTION 6.1 FOR THE EDIT PROCEDURE.

   3. IF THE DATA ENTRY ROUTINE IS TO BE USED (REFER TO AIDPC PROGRAM DESCRIPTION SECTION 3.5.2) THEN EACH DATA WORD TO BE ENTERED IN FUNCTION 3 MUST BE PUNCHED ON A SEPARATE CONTROL CARD. EACH CONTROL CARD MUST THEN BE FOLLOWED BY A $$FNF CARD. AFTER ENTERING THE CONTROL CARD FOR FUNCTION 2, ALL THE CONTROL CARDS FOR FUNCTION 3 MAY BE ENTERED BY COMPLEMENTING C.E. SWITCH 8 ONCE FOR EACH CARD TO BE READ.

AI LOGICALLY ON LINE

   1. WHEN THE AIDPC PROGRAM DETECTS THAT A.I. IS LOGICALLY ON LINE, IT WILL BRANCH TO ROUTINE B. ROUTINE B HAS BEEN INCLUDED IN THE AIDPC PROGRAM FOR ON LINE OPERATION ONLY AND CANNOT BE RUN OFF LINE. ROUTINE B ALLOWS FOR THE SHARING OF AI BETWEEN THE OFT AND THE CUSTOMER.

   2. IF THE AIDPC OFT IS TO BE RUN WITH AI LOGICALLY ON LINE, THE FOLLOWING INFORMATION SHOULD BE ENTERED, VIA CONTROL CARDS, AT OFT LOAD TIME.

      A. THE MULTIPLEX ADDRESS OF THE POINT TO BE TESTED (SOLID STATE OR RELAY).

      B. THE RANGE FOR THE POINT TO BE TESTED.

      C. THE NUMBER OF ROUTINE CYCLES TO BE PERFORMED.

   3. PUNCH THE REQUIRED INFORMATION INTO CONTROL CARDS (FORMAT EXPLAINED IN SECTION 6.4) AS FOLLOWS.

      $$FN1 2300 AAAA
      $$FN2 2300 RRRR
      $$FN3 2300 CCCC
      $$FNF

      WHERE-

      AAAA = THE MULTIPLEX ADDRESS IN DECIMAL.
             MAX RELAY ADDRESS = 1023
             MAX SOLID STATE ADDRESS = 5119

      RRRR = THE MILLVOLT RANGE OF THE POINT TO BE TESTED IN DECIMAL.
             MAX RANGE IS 5000 MILLIVOLTS = 5 VOLTS

      CCCC = NUMBER OF ROUTINE CYCLES TO BE PERFORMED IN DECIMAL.
             MAX CYCLES IS 9999.

      THE FOLLOWING DEFAULT VALUES WILL BE USED FOR ANY CONTROL CARD NOT ENTERED, OR ANY MAX DECIMAL VALUE EXCEEDED.

      MULTIPLEX ADDRESS = 4864 - C.E. POINT
      MILLIVOL RANGE   = 5000 - 5 VOLTS
      ROUTINE CYCLES   = 0010 - 10 CYCLES

   4. THE SPECIFIED POINT WILL BE ADDRESSED AND EVALUATED ONCE ON EACH ROUTINE CYCLE, AND THE RESULTS PRINTED FOR OPERATOR OBSERVATION.

   5. WHEN THE NUMBER OF CYCLES HAVE BEEN TAKEN, MESSAGE C001 WILL BE PRINTED AND OFT OPERATION WILL BE SUSPENDED.

   6. TO RE-INITIATE ROUTINE B OPERATION, DE-EXECUTE THE AIDPC PROGRAM BY TURNING C.E. SWITCH 11 ON, THEN FOLLOWING THE DE-EXECUTE PRINTOUT, TURN C.E. SWITCH 11 OFF TO EXECUTE, ROUTINE B WILL PERFORM THE NUMBER OF CYCLES SPECIFIED.

   7. CONTROL CARDS CONTAINING NEW PARAMETERS MAY BE ENTERED AT ANY TIME, HOWEVER THE NEW PARAMETERS WILL NOT BECOME EFFECTIVE UNTIL ALL CYCLES FOR THE PRESENT OPERATION HAVE BEEN COMPLETED, OR THE OFT DE-EXECUTED AND RE-EXECUTED.

   8. PRINTOUTS

      FIVE PRINTOUTS CAN OCCUR FROM ROUTINE B. ONE PRINTOUT PROVIDES THE RESULTS OF EACH TEST ON THE SPECIFIED POINT, AND THE OTHER FOUR PROVIDE FOR STATUS, COMMAND AND ERROR INFORMATION.

      A. DATA EVALUATION PRINTOUT

CUST ENG 0000AAAA 0000RRRR SCCC.CCCCC SOODDDDDD

AAAA= THE MULTIPLEX ADDRESS IN DECIMAL.
RRRR= THE MILLIVOLT RANGE IN DECIMAL.
S= SIGN. ONLY NEGATIVE SIGN IS PRINTED.
CCCCCCCC= ADC READING IN DECIMAL.
THE READING IS VOLTS IF USING THE 5V RANGE AND MILLIVOLTS FOR ALL OTHER RANGES
DDDDDDDD= DIGITS VALUE IN DECIMAL.

B. STATUS MESSAGE

```
          PID  MID  RID  RAD
CUST ENG  23DD ADD2 DD0B RRRR
```

THIS MESSAGE IS PRINTED WHEN ROUTINE B DETECTS THAT A.I. HAS BEEN LOGICALLY TAKEN OFF LINE. THIS MESSAGE WILL BE FOLLOWED BY MESSAGE CDD1.

ROUTINE B CANNOT TEST AI IF IT IS LOGICALLY OFF LINE. THE AIDPC PROGRAM MUST BE RELOADED IF IT IS DESIRED TO TEST AI WHILE IT IS LOGICALLY OFF LINE.

TO RELOAD AIDPC, FOLLOW THE PROCEDURE FOR 'LOADING NEW OFT' SECTION 3.2.3.

C. COMMAND MESSAGE

```
          PID  MID  RID  RAD
CUST ENG  23DO C001 000B RRRR
```

THIS MESSAGE IS PRINTED FOLLOWING THE COMPLETION OF THE SPECIFIED NUMBER OF ROUTINE CYCLES, AND FOLLOWING MESSAGE A002 IF AI WAS LOGICALLY TAKEN OFF LINE. THIS IS A SELECT OPTION MESSAGE. FOLLOWING THIS MESSAGE, ROUTINE B ENTERS AN IDLE LOOP. IF THE MESSAGE OCCURED DUE TO THE COMPLETION OF THE SPECIFIED NUMBER OF CYCLES, THEN THE ROUTINE CAN BE REPEATED BY DE-EXECUTING AND THEN RE-EXECUTING THE DFT.

IF THE MESSAGE OCCURED FOLLOWING THE A002 PRINTOUT, THEN THE PROCEDURE DEFINED IN THE A002 PRINTOUT EXPLANATION SHOULD BE FOLLOWED.

D. ERROR PRINTOUTS

```
          PID  MID  RID  RAD
CUST ENG  230D EDD9 0D0B RRRR
```

THIS MESSAGE INDICATES THAT A LOST INTERRUPT HAS BEEN DETECTED. THE ON LINE DIAGNOSTIC MONITOR ALLOWS 4 TO 6 SECONDS FOR AN INTERRUPT TO OCCUR, BEFORE NOTIFYING THE ROUTINE OF THE TIMEOUT CONDITION.

```
          PID  MID  RID  RAD  MOD1
CUST ENG  23DD E00A 000B RRRR DDDO
```

MOD1 -DDOD = THE AI DSW AT THE TIME OF THE ERROR.

THIS MESSAGE IS PRINTED WHENEVER THE DSW INDICATES AN AI ERROR CONDITION. THE ERROR ENCOUNTERED IS AS SHOWN IN THE DSW.

9. ROUTINE B GENERAL DESCRIPTION

THE DFT SHARES AI BY HAVING ROUTINE B CALL ON THE MPX SYSTEM FOR THE USE OF AI. ROUTINE B WILL CALL THE MPX GETQ ROUTINE TO ENTER ITS I/O ROUTINE IN THE A.I. QUEUE. BY ENTERING INTO THE QUEUE, ROUTINE B WILL NOT ISSUE I/O COMMANDS TO A.I. UNTIL ALL PREVIOUS REQUEST TO USE A.I. HAVE BEEN SATISFIED. WHEN THE I/O ROUTINE IN ROUTINE 'B' IS CALLED IN TURN, IT WILL ISSUE IT'S I/O COMMAND TO THE SPECIFIED ADDRESS AND THEN SETUP TO AWAIT THE A.I. INTERRUPT. WHEN THE INTERRUPT IS RECEIVED, ROUTINE B WILL READ THE CONVERTED POINT, REMOVE ITSELF FROM THE AI QUEUE BY CALLING ON THE MPX GETQ ROUTINE, AND THEN CALL ON THE NEXT PROGRAM, IF ANY, WHICH IS AWAITING ITS TURN IN THE QUEUE. ROUTINE B WILL THEN EVALUATE THE READING OBTAINED AND OUTPUT THE DATA EVALUATION MESSAGE. THIS OPERATION WILL BE REPEATED THE NUMBER OF TIMES SPECIFIED BY THE CYCLE COUNT ENTRY.

6. 082E - 2790 BASIC DFT

   1. ONLY ONE LOOP ADAPTER (2790) AT A TIME MAY BE SELECTED FOR TESTING.

   2. THE 2790 LOOP ADAPTER TO BE TESTED MUST BE LOGICALLY OFF-LINE. THIS IS DONE BY THE USE OF THE CE CORE LOAD EXTENSION FOR THE 279D (CECLX).

      A. SELECT 2790 FUNCTION BY REQUESTING THE CE CORE LOAD AND SETTING THE CE SENSE SWITCHES TO '0D000011' AND PRESSING START.

      B. SET 279D FUNCTION '1000D00Y' IN THE CE SENSE SWITCHES AND PRESSING START. Y=D...LOOP 1
         Y=1...LOOP 2

         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'YOU REQUESTED LOOP (1OR2) OFF. IF OK, TURN ON SW 11 AND PRESS START.'

      C. TURN ON SW 11 AND PRESS START.
         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'COMPLETION CODE /0DXX.' XX=D1...LOOP Y COMPLETED OK
         ALL OTHER COMPLETION CODES SHOULD BE REFERED TO IN THE CE CORE LOAD DOCUMENTATION.

      D. TURN OFF CE SENSE SWS AND PRESS START.

   3. THE 2790 DFT ROUTINES OPERATE ON-LINE IN THE SAME MANNER AS THE OFF-LINE.

   4. REFER TO THE DFT PROGRAM DOCUMENTATION FOR A DESCRIPTION OF THE ON-LINE PRINTOUTS.

   5. LOCATION $2790 CONTAINS THE ADDRESS OF THE 279D LOOP ADAPTER COMMUNICATIONS AREA. THE COMMUNICATIONS AREA CONTAINS THE ADDRESSES OF THE 2790 LOOP ADAPTER DEVICE TABLES. ADDR&2 = LOOP NUMBER 1 DEVICE TBL ADDR.
      ADDR&3 = LOOP NUMBER 2 DEVICE TBL ADDR.

   6. AN OPTION TO BYPASS THE AIDE PRINTOUTS HAS BEEN SET UP THROUGH THE USE OF THE BYPASS DFT ERROR PRINTOUT.(SW 13 OF THE MPXDM OPTION) THIS ALLOWS BY PASSING AIDE PRINTOUTS AND EXPEDITING THE EXECUTION OF THE OTHER MPXDM OPTIONS.

      *** NOTE ***....MPXDM LOOP ON DFT ERROR AND DFT PROGRAM AIDE OPTION MAY NOT BE EXECUTED AT THE SAME TIME.

   7. TO SET THE 279D LOOP ADAPTER BACK ON-LINE.

      A. EXECUTE STEP 2.A ABOVE.

      B. SET 279D FUNCTION '100DD01Y' IN THE CE SENSE SWITCHES AND PRESSING START. Y=0...LOOP 1
         Y=1...LOOP 2

         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'YOU REQUESTED LOOP (1 OR 2) ON. IF OK, TURN ON SW 11 AND PRESS START.'

      C. EXECUTE STEPS 2.C AND 2.D ABOVE.

7. PID 082F - 2790 RD/WRT DFT

   1. ONLY ONE LOOP ADAPTER (279D) AT A TIME MAY BE SELECTED FOR TESTING.

   2. THE 2790 LOOP ADAPTER TO BE TESTED MUST BE LOGICALLY OFF-LINE. THIS IS DONE BY THE USE OF THE CE CORE LOAD EXTENSION FOR THE 2790 (CECLX).

      A. SELECT 2790 FUNCTION BY REQUESTING THE CE CORE LOAD AND SETTING THE CE SENSE SWITCHES TO '00000011' AND PRESSING START.

      B. SET 279D FUNCTION '100D000Y' IN THE CE SENSE SWITCHES AND PRESSING START. Y=0...LOOP 1
         Y=1...LOOP 2

         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'YOU REQUESTED LOOP (1OR2) OFF. IF OK, TURN ON SW 11 AND PRESS START.'

      C. TURN ON SW 11 AND PRESS START.
         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'COMPLETION CODE /00XX.' XX=01...LOOP Y COMPLETED OK
         ALL OTHER COMPLETION CODES SHOULD BE REFERED TO IN THE CE CORE LOAD DOCUMENTATION.

      D. TURN OFF CE SENSE SWS AND PRESS START.

   3. THE 2790 DFT ROUTINES OPERATE ON-LINE IN THE SAME MANNER AS THE OFF-LINE.

   4. REFER TO THE DFT PROGRAM DOCUMENTATION FOR A DESCRIPTION OF THE ON-LINE PRINTOUTS.

   5. LOCATION $2790 CONTAINS THE ADDRESS OF THE 2790 LOOP ADAPTER COMMUNICATIONS AREA. THE COMMUNICATIONS AREA CONTAINS THE ADDRESSES OF THE 2790 LOOP ADAPTER DEVICE TABLES. ADDR&2 = LOOP NUMBER 1 DEVICE TBL ADDR.
      ADDR&3 = LOOP NUMBER 2 DEVICE TBL ADDR.

   6. AN OPTION TO BYPASS THE AIDE PRINTOUTS HAS BEEN SET UP THROUGH THE USE OF THE BYPASS DFT ERROR PRINTOUT.(SW 13 OF THE MPXDM OPTION) THIS ALLOWS BY PASSING AIDE PRINTOUTS AND EXPEDITING THE EXECUTION OF THE OTHER MPXDM OPTIONS.

      *** NOTE ***....MPXDM LOOP ON DFT ERROR AND DFT PROGRAM AIDE OPTION MAY NOT BE EXECUTED AT THE SAME TIME.

   7. TO SET THE 2790 LOOP ADAPTER BACK ON-LINE.

      A. EXECUTE STEP 2.A ABOVE.

      B. SET 279D FUNCTION '1D00001Y' IN THE CE SENSE SWITCHES AND PRESSING START. Y=0...LOOP 1
         Y=1...LOOP 2

         A MESSAGE WILL BE PRINTED AS FOLLOWS

         'YOU REQUESTED LOOP (1 OR 2) ON. IF OK, TURN ON SW 11 AND PRESS START.'

      C. EXECUTE STEPS 2.C AND 2.D ABOVE.

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